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Climax Mine, M-1977-493, Revised DRMS Cost Estimate

Ebert - DNR, Jared <jared.ebert@state.co.us>

Tue, Apr 2, 2019 at 1:41 PM

To: "Lazuk, Raymond" <rlazuk@fmi.com>

Cc: "Kelts, Diana" <dkelts@fmi.com>, Andrew Hardy <Andrew.Hardy@ajax-ltd.com>, Eric Scott <eric.scott@state.co.us>, Michael Cunningham - DNR <michaela.cunningham@state.co.us>

Hello Ray,

I have revised our reclamation cost estimate to reflect a reduction in the volume of the 3 Mill Building as we discussed today. The estimate is attached.

The final liability amount came to \$91,011,850.00. Climax currently has posted \$78,246,088.00 in the form of two corporate sureties. The revised liability amount will result in a \$12,765,762.00 increase. Please let me know if you have any questions. I will work with Eric to issue a surety increase revision.

Again, thank you and your team for working closely with us through this process.

Jared

Jared Ebert

Environmental Protection Specialist III



COLORADO Division of Reclamation, Mining and Safety Department of Natural Resources

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COST SUMMARY WORK

Task desci	iption:	Cost Summary			
ite: Climax	Mine	Pe	rmit Action: March 2019	Permit/Jo	b#: <u>M1977493</u>
PROJECT	<u> IDENTIFIC</u>	ATION			
Task #:	000	State:	Colorado	Abbreviation:	None
Date:	4/2/2019 11:41:56 AN	County:	Summit	Filename:	M493-000

TASK LIST (DIRECT COSTS)

Task		Form	Fleet	Task	
	Description	Used	Size	Hours	Cost
A01	Storke Complex - Load and haul biosolids to 10	TRUCK1	1	13.21	\$13,524
	acre area.				
A02	Storke Complex, Spread biosolids	DOZER	1	40.33	\$5,667
A03	Storke Complex, Grading at Storke disturbed areas	GRADER	1	6.11	\$550
B01	Open Pit, Grade west open pit periphery	DOZER	2	115.44	\$51,095
B02	Open Pit, load and haul topsoil	TRUCK1	1	65.14	\$66,685
B03	Open Pit, Spread biosolids	DOZER	2	128.43	\$34,487
B04	Install Signs	NA	1	25.97	\$4,629
C01	Mine Mill Comp. Grade 1' cut/fill across 243 acres	DOZER	4	634.47	\$669,964
C02	Mine Mill Comp. Finish grade Mine/Mill Complex	GRADER	2	78.15	\$14,072
C03	Mine Mill Comp. Load/Haul Topsoil/Biosolids, 1'	TRUCK1	1	970.25	\$844,809
	Cover				
C04	Mine Mill Comp. Spread Topsoil and Biosolids	DOZER	3	424.61	\$218,548
D01	N40_OSF, Regrade top to drain, slopes 2h:1v	DOZER	4	503.04	\$498,383
D02a	North 40 OSF. Load/Haul Biosolids, 6" Cover	TRUCK1	1	158.27	\$162,026
D02b	North 40 OSF. Load/Haul Topsoil, 6" Cover	TRUCK1	1	171.58	\$123,139
D03	North 40 OSF, Spread Biosolids and Topsoil	DOZER	4	83.09	\$52,231
D04	N40 OSF, Construct Post-Mining Channels	NA	1	3,338.00	\$1,110,661
E01	McNulty OSF, Regrade slopes 2:1,	DOZER	4	1,312.52	\$1,365,268
E02a	McNulty OSF. Load/Haul Topsoil, 6" Cover	TRUCK1	1	785.89	\$564,000
E02b	McNulty OSF. Load/Haul Biosolids, 6" Cover	TRUCK1	1	709.62	\$835,093
E03	North 40 OSF, Spread Biosolids and Topsoil	DOZER	4	372.56	\$234,188
E04	McNulty OSF, Construct Post-Mine Channels	NA	1	7,877.29	\$3,204,164
F01	Tenmile TSF, geogrid on wet cover area 113.5	NA	1	0.00	\$2,609,365
	acres				
F02	Tenmile TSF, Load and Haul Subsoil for Wet	TRUCK1	1	1,194.69	\$1,405,924
	Cover Area				
F02a	Tenmile TSF, Load and Haul Topsoil for Wet	TRUCK1	1	238.94	\$281,186
	Cover Area				
F03	Tenmile TSF, Spread Subsoil	DOZER	4	530.90	\$442,756
F03a	Tenmile TSF, Spread Biosolids and Topsoil	DOZER	4	64.09	\$53,451
F04	Tenmile TSF, Load and Haul Subsoil for Dry	TRUCK1	1	673.62	\$792,720
	Cover Area				
F04a	Tenmile TSF, Load and Haul Topsoil/BioS. for	TRUCK1	1	673.62	\$792,720
	Dry Cover Area				
F05	Tenmile TSF, Spread Subsoil, Dry Cover	DOZER	4	318.54	\$265,654
F05a	Tenmile TSF, Spread Topsoil/Subsoil, Dry Cover	DOZER	4	192.28	\$160,353
G01	Tenmile Tunnel, Bulkhead Closure	MINESEAL	1	0.00	\$694,824
		V		b	•

α	T	T	1	1	
G02	Tenmile Tunnel; Dredge and Pump Sludge to Tunnel	PUMPING	1	388.25	\$87,098
G03	Tenmile Tunnel, Install Checkdams	MINESEAL	1	0.00	\$40,000
H01a	3 Dam, Load and Haul Topsoil to 3 Dam Rise	TRUCK1	1	19.10	\$19,558
H01b	3 Dam, Load and Haul Biosolids to 3 Dam Rise	TRUCK1	1	18.19	\$21,405
H02	3 Dam, Spread Topsoil and Biosolids over 3 Dam Rise	DOZER	1	53.09	\$9,109
I01	Pond Shop, Grading	DOZER	1	10.80	\$2,390
I02	Pond Shop, Load and Haul topsoil to Pond Shop	TRUCK1	1	1.61	\$1,156
I03	Pond Shop, Spread topsoil	DOZER	1	2.62	\$471
J01a	Mayflower TSF, Load and Haul Subsoil to TSF	TRUCK1	1	479.09	\$563,801
J01b	Mayflower TSF, Load and Haul Topsoil to TSF	TRUCK1	1	479.09	\$563,801
J02a	Mayflower TSF, Spread Subsoil	DOZER	2	456.93	\$190,534
J02b	Mayflower TSF, Spread Topsoil	DOZER	2	275.81	\$115,011
J03	Mayflower TSF, Finish Grade the Top Surface	GRADER	2	71.40	\$12,856
K01	East Side Channel Construction	NA	1	12,878.45	\$2,974,669
K02	East Side Channel, Install East Side Pipeline	DEMOLISH	1	489.41	\$1,842,048
L01	Mayflower Acid, Grade Site	DOZER	2	100.81	\$44,227
L02a	Mayflower Acid, Load and Haul Subsoil to site	TRUCK1	1	1.48	\$1,292
L02b	Mayflower Acid, Load and Haul Topsoil	TRUCK1	1	1.48	\$1,292
L028	Mayflower Acid, Spread Subsoil	DOZER	1	5.06	\$869
L03b	Mayflower Acid, Spread Subsoli	DOZER	1	3.06	\$524
M01	Robinson TSF, Load and Haul Topsoil	TRUCK1	1	296.32	\$212,656
M01 M02	Robinson TSF, Spread Topsoil/Biosolids	DOZER	2	291.27	\$78,213
N01	1 Dam, Load and Haul Topsoil/Biosolids	TRUCK1	1	85.68	\$74,602
N01 N02	1 Dam, Spread Topsoil/Biosolids	DOZER	2	101.76	\$27,325
001	Roads; rip switchback access roads from McNulty	RIPPER	2	44.94	\$28,829
001	OSF to LBM	KII I EK	2		φ20,027
O02	Roads; rip other site roads	RIPPER	2	12.17	\$5,483
O03	Roads, Load and Haul Topsoil/Biosolids	TRUCK1	1	266.72	\$232,234
O04	Roads, Spread Topsoil/Biosolids	DOZER	3	211.18	\$85,061
P01	Robinson Lake, sediment removal	NA	1	0.00	\$2,333,570
Q01a	5 Dam, Load and Haul Subsoil to site	TRUCK1	1	53.41	\$62,859
Q01b	5 Dam, Load and haul topsoil to site	TRUCK1	1	53.41	\$62,859
Q02a	5 Dam, Spread Subsoil	DOZER	2	55.57	\$23,173
Q02b	5 Dam, Spread Topsoil	DOZER	2	33.54	\$13,988
R01	Revegetation, Seeding Standard Mixture	REVEGE	1	1,466.00	\$2,137,286
R02	Revegetation, Seeding Standard Mixture - Steep Slope	REVEGE	1	263.00	\$778,690
R03	Revegetation, Seeding Alpine	REVEGE	1	227.00	\$271,233
R04	Revegetation, Seeding Alpine - Steep Slope	REVEGE	1	475.00	\$1,156,493
R05	Revegetation, Seeding - Wetland	REVEGE	1	25.00	\$22,637
S01	Seal Underground Mine Opening	MINESEAL	1	30.00	\$1,805
T01	Mobilization - Year 1	MOBILIZE	1	37.41	\$336,565
T02	Mobilization - Year 2	MOBILIZE	1	37.41	\$336,565
T03	Mobilization - Year 3	MOBILIZE	1	37.41	\$336,565
V01	Hydrologic Protection	NA	1	0.00	\$33,129,000
W01	Maintenance and Environmental Control	SITEMAINT	1	0.00	\$521,177
		ENANCE			
X01	Demolition 1 - Former Mine	DEMOLISH	1	0.00	\$3,563,306
X02	Demolition 2 - Various demolition (continued from	DEMOLISH	1	0.00	\$23,486
	Demo 1)		J		
X03	Demolition 3- New Structures	DEMOLISH] 1	0.00	\$3,801,386
Y01	Disposal of Reagents	DEMOLISH] 1	0.00	\$162,201
			-		

		SUBTOTALS:	41540.58	\$73,883,494
INDIRECT COSTS			1	
OVERHEAD AND PROFIT:				
Liability insurance: Performance bond: Job superintendent: Profit: LEGAL - ENGINEERING - PR		RACT AMOUNT (direct +	$Total = \frac{\$7}{Total} = \frac{\$1}{Total} = \frac{\$1}{Total} = \frac{\$7}{Total} = \frac{\$7}{Total$,492,447 75,777 ,517,270 7,388,349 1,173,842 55,057,336
Financial warranty process Engineering work and/or or Reclamation managemer	contract/bid preparation:	\$500 2.00 5.00	Total = \$1	500 ,701,147 ,252,867
	CONTINGENCY:	0.00	Total = $\$0$)
		TOTAL INDIRECT	COST = $$1$	7,128,356
	TOTAL BC	OND AMOUNT (direct + in	direct) =\$9	91,011,850

TRUCK/LOADER TEAM WORK

Task description:	Storke (Complex - Lo	ad and haul biosol	ids to 10 acre ar	ea.		
Site: Climax Mine		Permit A	Action: <u>March 20</u>	19	Permit/Job#: M1977493		
PROJECT IDEN	TIFICATION						
Task #: A01			lorado		previation:	None	
Date: 3/12/2	2019 0	County: Sur	nmit		Filename:	NA	
User: JLE							
Agency or	organization nan	ne: DRMS					_
HOURLY EQUIE	PMENT COST			Shift ba	sis: <u>1 per day</u>	Y	
			Equipment Desci	ription			
T	ruck Loader Tear		Cat 740				_
			CAT 950H				_
Suppo	ort Equipment -Lo		Cat D6T XL				_
Dood Ma	-Du aintenance –Moto		VA CAT 12M				-
Koau Ma			Vater Tanker, 5,000	Gal			-
	· · · · ·	er muek.	vater ranker, 5,000	Gui.			-
Cost Breakdown:	Truck/Loa	der Team	Support	Equipment	Mair	ntenance Equ	ipment
<u></u>	Truck	Loader	Load Area	Dump Area	Motor Grader		Truck
%Utilization-machine:	100	10	0 100	NA	1	00	100
Ownership cost/hour:	\$66.13	\$26.1	4 \$52.66	NA	\$30.	.73	\$25.30
Operating cost/hour:	\$55.75	\$30.8	4 \$46.34	NA	\$30.	.60	\$36.60
%Utilization-riper:	NA		0 NA	NA	Ν	NA	NA
Ripper own. cost/hour:	NA	\$0.0	0 \$0.00	NA	\$0.	.00	\$0.00
Ripper op. cost/hour:	NA	\$0.0	0 \$0.00	NA	\$0.	.00	\$0.00
Operator cost/hour:	\$31.17	\$40.9	0 \$41.52	NA	\$28.	.69	\$21.23
Unit Subtotals:	\$153.05	\$97.8	9 \$140.52	NA	\$90.	.02	\$83.13
Number of Units:	4		1 1	0		1	1
Group Subtotals:	Work:	\$710.09	Support:	\$140.52	Mai	nt: \$173.1	5

Total work team cost/hour: \$1,023.76

MATERIAL QUANTITIES

Initial volume:	5,323	CCY	Swell factor:	1.000	
Loose volume:	5,323	LCY			
Sourc	e of estimated volume:	4" Over 10	Acres per Climax	Estimate	
Source of	estimated swell factor:	Cat Handbo	ook		
Ν	Aaterial Purchase Cost:	\$0.00			
	Total Cost:	\$0.00			

HOURLY PRODUCTION

Truck Capacity:					
Truck Payload (weight) Basi		Dound			
Material weight: Description:	1,600 Top Soil	Pounds	S/LC Y		
Rated Payload:	87,000	Pounds	2		
Payload Capacity:	54.38	LCY	5		
Tayload Capacity.	54.50				
Truck Bed (volume) Basis:					
Struck Volume:		LCY			
Heaped Volume:		LCY			
Average Volume:		LCY			
Adjusted Volume:	31.40	LCY			
Final	Truck Volume E	Based on Number of I	Loader Passes:	31.61	LCY
Loading Tool Capacity					
Rated Capacity:	4.300	LCY (heaped)	Buck	et Size Class: NA	4
Bucket Fill Factor:	1.050	Other - moist loa	am (100-	110%) 1.050	
Adjusted Capacity:	4.515	LCY	uni (100	110/0/1.050	
Job Condition Corrections	<u>.</u>	Sit	e Altitude (ft.):	<u>12000</u> feet	
	Truck	Loader	Source		
Altitude Adj:	0.600	1.000	(CAT HB		
Job Efficiency:	0.830	0.830	(CAT HB		
Net Correction:	0.498	0.830		<u>, </u>	
Loading Tool Cycle Time:	N	umber of Loading To	ool Passes Requ	ired to Fill	7 passes
Excavators and Front Shove			oor russes reequ	Truck:	7
Machine Cycle Time v Selected Value					
		e			
Track Loaders –		ption:			
Cycle Time Elements (min.):					
Load: NA	M	aneuver: NA		Dump: 0.100	
Wheel and Trac	k Loaders - Una	djusted Basic Loader		ad, dump, 0.5	500 minutes
Cycle Time Factors			1	Factor (min.)	Source
Material:	Mixed mater	ial 0.02		0.020	(Cat HB)
Stockpile:	Dumped by t			0.020	(Cat HB)
Truck Ownership:		nership of trucks and	loaders -	-0.040	(Cat HB)
Operation:	Constant ope	ration -0.04		-0.040	(Cat HB)
Dump Target:	Nominal targ			0.000	(Cat HB)
1 0		Net Cycle Time	e Adjustment:	-0.040	minutes
		Adjusted Loader		0.460	minutes
		Net Load Tir	ne per Truck:	2.860	minutes

	True	ck Exch	ange Time:	0.60	Minutes	Adju	sted for site al	titude:	1.000	Minutes
		Truck	Load Time:	2.860	Minutes	Adju	sted for site al	titude:	2.860	Minutes
	Truck M	aneuve	and Dump Time:	1.00	Minutes	Adju	sted for site al	titude:	1.667	Minutes
	Truck Trav maintained Haul Route	3.0	l & Return) T	ime:	Road Condit	ion: <u>Firm, smoo</u>	th, rolling, dirt		l, watered,	
	Seg #	Haul (Ft)	Distance	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)		
	1	13728	3.00	0.00	3.00	3.00	3005	5.361		
	D. (D.	4				Haul Time:	5.361	min	utes	
	Return Rou Seg #		Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel		
	565 11	(Ft)		Grade (70)	(%)	(%)	(fpm)	Time (min)		
	1	13728	3.00	0.00	3.00	3.00	3005	4.736		
					Total Tr	Return Time: uck Cycle Time:			nutes nutes	
					10141 110	uck Cycle Thile.	15.024	• 1111	nutes	
	oading Too. Produ Unit Produ	iction	491.27	LCY/Hour	ſ	Adjusted for j	ob efficiency:	407.7	5 LCY	//Hour
Truck	. Unit Produ		121.37	LCY/Hour	ſ	Adjusted for jo	ob efficiency:	100.7	LCY	//Hour
Optim	al No. of Tr	ucks:	4	Truck(s)		Selected Numb	per of Trucks:	4	Truc	k(s)
				Adjusted single	e truck/loade	k team productio r team productio r team productio	on: 402.	96 L	CY/Hour CY/Hour CY/Hour	
	JOB TIM	E AN	D COST							
	Fleet	size:	1	Team(s)	r	Fotal job time:	13.2	<u> </u>	Hours	
	Unit o	cost:	\$2.541	/LCY		Total job cost:	\$13,52	24		

Task description:	Storke Complex	, Spread bio	solids		
Climax Mine	Pe	rmit Action:	March 2019	Permit/Jo	ob#: <u>M1977493</u>
PROJECT IDENTIFI	CATION				
Task #: $A02$ Date: $3/12/2019$ User: JLE	State: County:	Colorado Summit		Abbreviation: Filename:	None NA
Agency or organ	nization name: DF	RMS			
HOURLY EQUIPME	NT COST				
	t D6T XL				
L	ni-Universal				
Attachment: NA					
	er day				
Data Source: (Cl	RG)				
Cost Breakdown:		1	Utilization %		
Ownership Cost/Hour:		\$52.66	NA		
Operating Cost/Hour:		\$46.34	100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.52	NA		
MATERIAL QUANT Initial Volume: 5,32 Swell factor: 1.00	0	_			
Loose volume: 5,32	3 LCY				
Source of estimated volu Source of estimated swe factor:			on, Mining & Safety		
HOURLY PRODUCI	TION				
Average push distance:	200 feet				
Unadjusted hourly production:	153.6 LCY/	/hr			
Materials consistency description:	Looses	stockpile 1.2			
Average push gradient:	0 %				
Average site altitude:	1,200 feet				
Material weight:	1,600 lbs/LCY				
Weight description:	Top Soil				

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Adjusted unit production:	131.99 LCY/hr
Adjusted fleet production:	131.99 LCY/hr

Fleet size:	1 Dozer(s)
Unit cost:	\$1.065/LCY

Total job time:	40.33 Hours
Total job cost:	\$5,667

MOTOR GRADER WORK

Task description:	Storke Complex	, Grading a	t Storke distu	rbed areas		
e: Climax Mine	Per	mit Action:	March 2019		Permit/Job#:	M1977493
PROJECT IDENTIFI	CATION					
Task #: A03 Date: $3/12/2019$ User: JLE	State: County:	Colorado Summit				lone IA
Agency or organ	ization name: DR	MS				
HOURLY EQUIPME	NT COST					
Basic Machine	: CAT 12M			Horsepower:	158	3
Ripper Attachment	:			Shift Basis:	1 per	
				Data Source:	(CR	G)
Cost Breakdown:						
_				Utilization %		
	ship Cost/Hour:		\$30.73	NA 100	_	
	ting Cost/Hour:		\$30.60 \$0.00	100 NA	-	
	ting Cost/Hour:		\$0.00	11/1	_	
	ator Cost/Hour:		\$28.69	NA	_	
Total	Unit Cost/Hour:		\$90.02		_	
Total I	Fleet Cost/Hour:	\$90	.02			
MATERIAL QUANTI	TIFS					
Total Area t	o be graded or ripped	d: 10.00			a	cres
Source	of estimated acreage	e: <u>Climax</u>	x Mine			
HOURLY PRODUCT	ION					
	Average Grader Sp	eed:	1.50	mph		
	Selected Applicat		Finish g	grading (0-2.5 m	nph) - 1.5	
	Selected Blade An		0	degrees	8	
	Effective Blade Len		12.00	feet		
	f blade overlap per p r ripping width per p		2.00 10.00	feet feet		
• •	Hourly Unit Product		1.8182	acres/h	our	
Job Condition Correction	-			ite Altitude: <u>120</u>		
		Source				
Altitude Adj:	1.00	(CAT HE	3)			
Job Efficiency:	0.90	(1sh/d, fa				
Net Correction:	0.9000	multiplier				
	justed Hourly Unit I justed Hourly Fleet I		1.6364 1.6364	acres/Hour acres/Hour		
Au		100000000	1,0204			
JOB TIME AND COS	<u>T</u>					
Fleet size: 1	Grader(s)		Total job time:	6.1	<u>1</u> H	Iours
Unit cost: \$55	.01 per acre		Total job cost	: \$55	0	

Task description:	Open Pit, Grade	e west open p	it periphery		
Climax Mine	Pe	rmit Action:	March 2019	Permit/Jo	o#: <u>M1977493</u>
PROJECT IDENTIFI	CATION				
Task #: B01 Date: 3/12/2019 User: JLE	State: County:	Colorado Summit		Abbreviation: Filename:	None NA
Agency or organ	nization name: DF	RMS			
HOURLY EQUIPME	NT COST				
	t D8T - 8SU				
Horsepower: 310					
• • • • • • • • • • • • • • • • • • • •	mi-Universal				
	hank ripper				
	er day				
	RG)				
Cost Breakdown:					
			Utilization %		
Ownership Cost/Hour:		\$93.62	NA		
Operating Cost/Hour:		\$73.35	100		
Ripper own. Cost/Hour:		\$8.93	NA		
Ripper op. Cost/Hour:		\$3.89	50		
Operator Cost/Hour:		\$41.52	NA		
MATERIAL QUANT Initial Volume: _26,5					
Swell factor: 1.00 Loose volume: 26,5	00 560 LCY				
Source of estimated volu		— (:			
Source of estimated von Source of estimated swe		line Estimate book			
factor:					
HOURLY PRODUCT	TION				
Average push distance:	250 feet				
Unadjusted hourly	377.8 LCY	/hr			
production:	577.6 LC 17	111			
Materials consistency description:	Rock, J	boorly ripped	or blasted 0.6		
Average push gradient:	-15 %				
Average site altitude:	12,000 feet				
Material weight:	3,300 lbs/LCY				
Weight description:	Decomposed rock	75% Doals	25% Forth		

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.600	(CAT HB)
Dozing method:	1.100	(50% SL)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	1.329	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.697	(CAT HB)
Blade type:	1.000	(PAT)

Adjusted unit production:	115.04 LCY/hr
Adjusted fleet	230.08 LCY/hr
production:	230.08 LC 1/11

Fleet size:	2 Dozer(s)	
Unit cost:	\$1.924/LCY	

Total job time:	115.44 Hours
Total job cost:	\$51,095

TRUCK/LOADER TEAM WORK

Task descripti	ion:	Open Pi	t, load a	nd haul	topsoil			
Site: Climax Mi	ne		Per	mit Act	ion: March 201	19	Permit/Job#	: <u>M1977493</u>
<u>PROJECT II</u>	DENT	IFICATION						
Task #:	B02		State:	Colora	ido	Abb	previation:	None
	3/12/20)19 C	County:	Summ	it		Filename:	NA
User:	JLE							
Agen	cy or oi	rganization nam	ie: DR	MS				
HOURLY E	QUIPN	MENT COST				Shift ba	sis: <u>1 per day</u>	
				H	Equipment Descr	iption		
	Tru	ick Loader Tear	n -Truck:			*		
			-Loader:		Г 950Н			
	Support	t Equipment -Lo			D6T XL			
			mp Area:					
Roa	ad Mair	ntenance – Moto			Г 12М	~ .		
		-Wat	er Truck:	Wat	er Tanker, 5,000	Gal.		
Cost Breakdov		Truck/Loa	dan Taam		Summent	Equipment	Maint	enance Equipment
Cost Dreakuov	<u>wn</u> :	Truck	Loader		Load Area	Dump Area	Motor	Water Truck
		TTUCK	Loader		Load Alea	Dump Area	Grader	Water Huek
%Utilization-machi	ine:	100		100	100	NA	10	0 100
Ownership cost/ho	our:	\$66.13	\$	526.14	\$52.66	NA	\$30.7	\$25.30
Operating cost/ho	our:	\$55.75	\$	630.84	\$46.34	NA	\$30.6	\$36.60
%Utilization-rij		NA		0	NA	NA	N	A NA
Ripper of cost/ho		NA		\$0.00	\$0.00	NA	\$0.0	\$0.00
Ripper op. cost/ho	our:	NA		\$0.00	\$0.00	NA	\$0.0	0 \$0.00
Operator cost/ho	our:	\$31.17	\$	640.90	\$41.52	NA	\$28.6	\$21.23
Unit Subtot	als:	\$153.05	\$	597.89	\$140.52	NA	\$90.0	92 \$83.13
Number of Un	nits:	4		1	1	0		1 1
Group Subtot	als:	Work:	\$710.09)	Support:	\$140.52	Main	t: \$173.15

Total work team cost/hour: **§1,023.76**

MATERIAL QUANTITIES

Initial volume:	26,560	CCY	Swell factor:	1.000	
Loose volume:	26,560	LCY			
Source	e of estimated volume:	Climax Mine			
Source of	estimated swell factor:	Cat Handbook	-		
Ν	Material Purchase Cost:	\$0.00			
	Total Cost:	\$0.00			

HOURLY PRODUCTION

Truck Capacity:					
Truck Payload (weight) Bas Material weight:	<u>1,600</u>	Pounds	/I CV		
Description:	Top Soil	r ounus/	LUI		
Rated Payload:	87,000	Pounds			
Payload Capacity:	54.38	LCY			
r ujioud Cupucity.		Der			
Truck Bed (volume) Basis:					
Struck Volume:	24.20	LCY			
Heaped Volume:	31.40	LCY			
Average Volume:		LCY			
Adjusted Volume:	31.40	LCY			
Final	Truck Volume I	Based on Number of L	oader Passes:	31.61	_ LCY
Loading Tool Capacity					
			Buck	et Size Class: <u>NA</u>	A
Rated Capacity:	4.300	LCY (heaped)	(100	1100() 1.050	
Bucket Fill Factor:	1.050	Other - moist loa	m (100-)	110%) 1.050	
Adjusted Capacity:	4.515	LCY			
Job Condition Correction	<u>s:</u>	Site	Altitude (ft.):	<u>12000</u> feet	
	Truck	Loader	Source		
Altitude Adj:	0.600	1.000	(CAT HB)	
Job Efficiency:	0.830	0.830	(CAT HB)	
Net Correction:	0.498	0.830			
Loading Tool Cycle Time	: N	lumber of Loading To	ol Passes Requ	ired to Fill	7 passes
Excavators and Front Shov		8	1	Truck:	7
Machine Cycle Time Selected Value	within this Basic				
Track Loaders	– Material Descri	ption:			
Cycle Time Elements (min.):				
Load: NA	M	aneuver: NA		Dump: 0.100	
Wheel and Tra	ck Loaders - Una	djusted Basic Loader	•	ad, dump, 0.4	500 minutes
Cycle Time Factors	5			Factor (min.)	Source
Material				0.020	(Cat HB)
Stockpile	· · ·			0.020	(Cat HB)
Truck Ownership	: Common ow 0.04	nership of trucks and	loaders -	-0.040	(Cat HB)
Operation		ration -0.04		-0.040	(Cat HB)
Dump Target	: Nominal targ			0.000	(Cat HB)
		Net Cycle Time		-0.040	minutes
		Adjusted Loader		0.460	minutes
		Net Load Tim	e per Truck:	2.860	minutes

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	1.000	Minutes
Truck Load Time:	2.860	Minutes	Adjusted for site altitude:	2.860	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.667	Minutes
Travels Treased (Hearl & Deturn)	lima	Dood Conditi	on Firm month rolling dirt/lt aurfa	and motored	

maintained 3.0

Truck Travel (Haul & Return) Time: Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Seg #	Haul Dis	stance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
	(Ft)			(%)	(%)	(fpm)	Time (min)	
1	2373.00		6.00	3.00	9.00	983	2.505	
2	3382.20		-12.00	3.00	-9.00	1507	2.367	
					Haul Time:	4.872	minut	tes
Return Ro								_
Seg #	Haul Dis	stance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
	(Ft)			(%)	(%)	(fpm)	Time (min)	
1	3382.20		12.00	3.00	15.00	1139	3.010	
2	2373.00		-6.00	3.00	-3.00	3706	0.677	
					Return Time:	3.687	. minu	ites
				Total True	ck Cycle Time:	14.080	6 minu	utes
Loading To	ol unit							
Prod	luction	491.27	LCY/Hour		Adjusted for jo	b efficiency:	407.75	LCY/Hour
	luction	491.27 134.63	LCY/Hour LCY/Hour		Adjusted for jo	•		
Prod	luction luction				0 0	b efficiency:	111.74	
Prod uck Unit Prod	luction luction	134.63	LCY/Hour Truck(s)		Adjusted for jo	bb efficiency: er of Trucks:	111.74	LCY/Hour
Prod uck Unit Prod	luction luction	134.63 4	LCY/Hour Truck(s) Adjusted single	hourly truck truck/loader	Adjusted for jo Selected Numb team production team production	bb efficiency: er of Trucks: n: <u>446.</u> n: <u>407.</u>	111.74 4 4 1C^ 75LC^	LCY/Hour Truck(s) Y/Hour Y/Hour
Prod uck Unit Prod	luction luction	134.63 4	LCY/Hour Truck(s) Adjusted	hourly truck truck/loader	Adjusted for jo Selected Numb team production team production	bb efficiency: er of Trucks: n: <u>446.</u> n: <u>407.</u>	111.74 4 4 6LC 75LC	LCY/Hour Truck(s) Y/Hour
Prod ruck Unit Prod timal No. of T	luction luction	134.63 4 A	LCY/Hour Truck(s) Adjusted single	hourly truck truck/loader	Adjusted for jo Selected Numb team production team production	bb efficiency: er of Trucks: n: <u>446.</u> n: <u>407.</u>	111.74 4 4 6LC 75LC	LCY/Hour Truck(s) Y/Hour Y/Hour
Prod ruck Unit Prod timal No. of T JOB TIM	luction luction `rucks:	134.63 4 A	LCY/Hour Truck(s) Adjusted single	hourly truck truck/loader truck/loader	Adjusted for jo Selected Numb team production team production	bb efficiency: er of Trucks: n: <u>446.</u> n: <u>407.</u>	<u> </u>	LCY/Hour Truck(s) Y/Hour Y/Hour

Task description:	Open Pit, Sprea	d biosolids			
e: Climax Mine	Pe	rmit Action:	March 2019	Permit/Job#	: <u>M1977493</u>
PROJECT IDENTIF	ICATION				
Task #: B03 Date: 3/12/2019 User: JLE	State:	Colorado Summit			None NA
Agency or orga	nization name: DR	RMS			
HOURLY EQUIPME	ENT COST				
	at D6T LGP				
Horsepower: 20 Blade Type: St	0 raight		-		
Attachment: NA			-		
	per day RG)		-		
Cost Breakdown:			-		
		Ф <u>50</u> 71	<u>Utilization %</u>		
Ownership Cost/Hour: Operating Cost/Hour:		\$50.71 \$42.03	<u>NA</u> 100		
Ripper own.		\$0.00	NA		
Cost/Hour: Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.52	NA		
MATERIAL QUANT Initial Volume: 26, Swell factor: 1.0	560 00	_			
Loose volume: 26,	560 LCY				
Source of estimated vol Source of estimated sw factor:			on, Mining & Safety		
HOURLY PRODUC	<u>FION</u>				
Average push distance:	200 feet				
Unadjusted hourly production:	153.6 LCY/	/hr			
Materials consistency description:	Consol	idated stockp	ile 1.0		
Average push gradient:	0 %				
Average site altitude:	12,000 feet				
Material weight:	1,600 lbs/LCY			_	
Weight description:	Top Soil				

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	0.940	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Adjusted unit production:	103.40 LCY/hr
Adjusted fleet	206.8 LCY/hr
production:	200:8 LC 1/III

Fleet size:	2 Dozer(s)	
Unit cost:	\$1.298/LCY	

Total job time:	128.43 Hours
Total job cost:	\$34,487

Permit		Permit			
No:	M-1977-493	Action:	Mar-19	User:	JLE
Site					
Name:	Climax Mine	Date:	3/12/2019	Division :	DRMS
Task No.	B04				
	Install				
Task Description					

Guide and Directional Sign, 12" x 18", ReflectorizedRS Means, 10 14 53.20 0600Steel Posts, galvanized, 10'-0", Upright boltedRS Means, 10 14 53.20 1500

	Labor Hours	Unit	2016 Bare Cost	Number	Total Hours	Total Cost
Signs	0.457	EA	\$70.25	41	18.737	\$2 <i>,</i> 880.25
Post	0.16	EA	\$42.66	41	6.56	\$1,749.06

TOTAL 25.297 \$4,6

Task description:	Mine Mill Com	p. Grade 1' c	ut/fill across 243 acre	s	
e: Climax Mine	Pe	rmit Action:	March 2019	Permit/Job	#: <u>M1977493</u>
PROJECT IDENTI	FICATION				
Task #: <u>C01</u> Date: <u>3/12/201</u> User: JLE	State: 19 County:	Colorado Summit		Abbreviation: _ Filename: _	None NA
	ganization name:	RMS			
HOURLY EQUIPM	IENT COST				
	Cat D9T - 9SU		_		
	-05				
<i>•</i> • • • • • • • • • • • • • • • • • •	Semi-Universal				
	3-shank ripper				
	per day				
Data Source: (CRG)				
Cost Breakdown:					
			Utilization %		
Ownership Cost/Hour		\$110.70	NA		
Operating Cost/Hour		\$95.46	100		
Ripper owr Cost/Hour	r:	\$12.36	NA		
Ripper op. Cost/Hour	r:	\$3.94	50		
Operator Cost/Hour	r:	\$41.52	NA		
	TITIES 91,879 215				
	76,133 LCY				
		_	F 1 2 240		
Source of estimated ve Source of estimated sy factor:		Estimate (Rev. Ibook	Feb 2019)		
HOURLY PRODUC	CTION				
Average push distance	e: 250 feet				
Unadjusted hourly production:	546.0 LCY	/hr			
Materials consistency description:	Compa	acted fill or en	nbankment 0.9		
Average push gradient:	0 %				
Average site altitude:	11,300 feet				
Material weight:	3,300 lbs/LCY				
Weight description:	Decomposed rock	- 75% Rock,	25% Earth		

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.100	(50% SL)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.697	(CAT HB)
Blade type:	1.000	(PAT)

Adjusted unit production:	187.61 LCY/hr
Adjusted fleet production:	750.44 LCY/hr

Fleet size:	4 Dozer(s)	
Unit cost:	\$1.407/LCY	

Total job time:	634.47 Hours
Total job cost:	\$669,964

MOTOR GRADER WORK

Task description:	Mine Mill Comp. Finisl	n grade Mine/Mill	Complex	
te: Climax Mine	Permit Act	tion: March 2019]	Permit/Job#: <u>M1977493</u>
PROJECT IDENTI	FICATION			
Task #: C02	State: Color	ado	Abbre	viation: None
Date: 3/12/20 User: JLE	19 County: Summ	nit	Fi	lename: NA
Agency or org	ganization name: DRMS			
HOURLY EQUIPM	IENT COST			
Basic Mach	ine: CAT 12M		Horsepower:	158
Ripper Attachm	ent:		Shift Basis:	1 per day
			Data Source:	(CRG)
Cost Breakdown:				
			Utilization %	
	nership Cost/Hour:	\$30.73	NA	
	erating Cost/Hour: nership Cost/Hour:	\$30.60 \$0.00	100 NA	
	erating Cost/Hour:	\$0.00	INA	
	perator Cost/Hour:	\$28.69	NA	
	tal Unit Cost/Hour:	\$90.02		
Tot	al Fleet Cost/Hour:	\$180.04		
MATERIAL QUAN	TITIES			
		3.00		acres
		imax Estimate (Re	v. Feb 2019)	
HOURLY PRODUC		X		
<u>HOUKLI I KODU</u>		1.50	mnh	
	Average Grader Speed: Selected Application:	<u>1.50</u> Finish	mph grading (0-2.5 mp	h) - 1 5
	Selected Blade Angle:	0	degrees	ii) 1.5
	Effective Blade Length:	12.00	feet	
	h of blade overlap per pass:	2.00	feet	
	g or ripping width per pass:	10.00	feet	
Unadjust	ed Hourly Unit Production:	1.8182	acres/hou	ır
Job Condition Correction			ite Altitude: 1130	<u>0</u> feet
19.9. a 1 a a		urce		
Altitude Adj		Γ HB)		
Job Efficiency: Net Correction:		d, fav.)		
		-		
	Adjusted Hourly Unit Producti		acres/Hour	
	Adjusted Hourly Fleet Producti	on: 3.1091	acres/Hour	
JOB TIME AND CO	OST			
Fleet size:	2 Grader(s)	Total job time	e: 78.16	Hours
Unit cost.	57.01 por corre	Total ich and	ι, Φ14 Ω Π	2
Unit cost:	per acre	Total job cost	t: \$14,07	2

TRUCK/LOADER TEAM WORK

Task description:	Mine M	ill Comp. Load/	Haul Topsoil/Bi	osolids, 1' Cover	•	
Site: Climax Mine		Permit Act	ion: March 201	19	Permit/Job#:	M1977493
PROJECT IDEN	TIFICATION					
Task #: C03		State: Colora	ido	Abb	previation: N	None
Date: 3/12/	2019 0	County: Summ	it		Filename: N	NA
User: JLE						
Agency or	organization nam	ne: DRMS				
HOURLY EQUIPMENT COST Shift basis: <u>1 per day</u>						
		H	Equipment Descr	iption		
Т	ruck Loader Tear					
			Г 950Н			
Suppo	ort Equipment -Lo		D6T XL			
Pood Ma	-Du aintenance –Moto	mp Area: NA	Г 12М			
Koau Wia			er Tanker, 5,000	Gal		
	,, u		or runter, 5,000	Out		
Cost Breakdown:	Truck/Loa	der Team	Support	Equipment	Mainte	enance Equipment
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	100	NA	100	0 100
Ownership cost/hour:	\$66.13	\$26.14	\$52.66	NA	\$30.73	3 \$25.30
Operating cost/hour:	\$55.75	\$30.84	\$46.34	NA	\$30.60	9 \$36.60
%Utilization-riper:	NA	0	NA	NA	NA	A NA
Ripper own. cost/hour:	NA	\$0.00	\$0.00	NA	\$0.00	0 \$0.00
Ripper op. cost/hour:	NA	\$0.00	\$0.00	NA	\$0.00	0.00
Operator cost/hour:	\$31.17	\$40.90	\$41.52	NA	\$28.69	9 \$21.23
Unit Subtotals:	\$153.05	\$97.89	\$140.52	NA	\$90.02	2 \$83.13
Number of Units:	3	1	1	0	1	1 1
Group Subtotals:	Work:	\$557.04	Support:	\$140.52	Maint	: \$173.15

Total work team cost/hour: **<u>\$870.71</u>**

MATERIAL QUANTITIES

Initial volume:	391,879	CCY	Swell factor:	1.000	
Loose volume:	391,879	LCY			—
Sourc	e of estimated volume:	1 Foot ove	r 243-acre Mine Mi	ill Complex	
Source of estimated swell factor:		Cat Handb	ook		
Material Purchase Cost:		\$0.00			
	Total Cost:	\$0.00			

HOURLY PRODUCTION

Truck Capacity: Truck Payload (weight) Basi								
Material weight:	1,600		Pounds/	CV				
Description:	Top Soil		1 Ounus/1					
Rated Payload:	87,000		Pounds					
Payload Capacity:	54.38		LCY					
Truck Bed (volume) Basis:								
Struck Volume:	24.20	LCY						
Heaped Volume:		LCY						
Average Volume:		LCY						
Adjusted Volume:	31.40	LCY						
Final	Truck Volume B	ased on Num	nber of Lo	oader Passes:	31.	61	LCY	
Loading Tool Capacity								
				Buck	et Size Clas	s: <u>N</u>	4	
Rated Capacity:	4.300	LCY (he			1100() 1.0	0		
Bucket Fill Factor:	1.050		noist loar	n (100-	110%) 1.05	0		
Adjusted Capacity:	4.515	LCY						
Job Condition Corrections	<u>:</u>		Site	Altitude (ft.):	<u>11300</u> feet			
	Truck	Loade		Source				
Altitude Adj:	0.600	1.000		(CAT HE				
Job Efficiency:	0.830	0.830)	(CAT HE	8)			
Net Correction:	0.498	0.830)					
Loading Tool Cycle Time:	N	umber of Loa	ading Too	ol Passes Requ			7	passes
Excavators and Front Shove	els:				Truck:			_
Machine Cycle Time v Selected Value	vs. Job Condition within this Basic		JA JA					
Track Loaders –	Material Descri	ption:						
Cycle Time Elements (min.)	:							
Load: NA	Ma	aneuver: N	NA		Dump:	0.100		
Wheel and Trac	k Loaders - Una	djusted Basic	: Loader (•	oad, dump, naneuver):	0.:	500 ⁿ	ninutes
Cycle Time Factors					Factor (1	nin.)	Source	
Material:		al 0.02			0.02		(Cat HB)
Stockpile:			0 ft. high	and up	0.00		(Cat HB	<u>, </u>
Truck Ownership:		nership of tru	icks and l	oaders -	-0.04	0	(Cat HB)
Operation:		ration -0.04			-0.04	0	(Cat HB)
Dump Target:					0.00	0	(Cat HB	
		•		Adjustment:	-0.06		minutes	5
				Cycle Time:	0.44		minutes	
		Net L	Load Time	e per Truck:	2.74	0	minutes	5

Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	1.000	Minutes
Truck Load Time:	2.740	Minutes	Adjusted for site altitude:	2.740	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.667	Minutes

Truck Travel (Haul & Return) Time: maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

]	Haul Route	:							
ſ	Seg #	Haul Dist	ance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
		(Ft)			(%)	(%)	(fpm)	Time (min)	
	1	8000.00		0.00	3.00	3.00	3005	3.455	
						Haul Time:	3.455	minute	s
ļ	Return Rou	n		$\mathbf{C} = 1 \cdot (0)$	D 11 D	T (1 D	X7.1 ·	Treesel	
	Seg #	Haul Dist	ance	Grade (%)	Roll. Res	Total Res	Velocity	Travel Time	
		(Ft)			(%)	(%)	(fpm)	(min)	
	1	8000.00		0.00	3.00	3.00	3005	2.829	
						Return Time:	2.829	minut	es
					Total Tru	ck Cycle Time:	11.69	1 minut	es
Lo	oading Too	ol unit							
	Produ		507.03	LCY/Hour		Adjusted for jo	ob efficiency:	420.84	LCY/Hour
Truck	Unit Produ	iction							
			162.21	LCY/Hour		Adjusted for jo	ob efficiency:	134.63	LCY/Hour
Optima	l No. of Tr	ucks:	3	Truck(s)		Selected Numb	er of Trucks:	3	Truck(s)
				Adjusted	hourly truck	team productio	n: 403.	89 LCY	/Hour
				Adjusted single	truck/loader	team productio	n: 403.	89 LCY	/Hour
			A	djusted multiple	e truck/loader	team productio	n: 403.	89 LCY	/Hour
<u>•</u>	JOB TIM	IE AND C	OST						
	Fleet	size:	1	Team(s)	Т	otal job time:	970.2	25 Ho	ours
	Unit o	cost:	\$2.156	/LCY	Т	Fotal job cost:	\$844,8	809	

Task description:	Mine Mill Com	p. Spread To	psoil and Biosolids		
Climax Mine	Pe	rmit Action:	March 2019	Permit/Jo	b#: <u>M1977493</u>
PROJECT IDENTIFI	CATION				
Task #: C04	State:	Colorado		Abbreviation:	None
Date: 3/12/2019	County:	Summit		Filename:	NA
User: JLE					
Agency or organ	nization name: DI	RMS			
HOURLY EQUIPME	NT COST				
	D7R DS Series II L	.GP			
Horsepower: 240 Blade Type: Stra) aight				
Attachment: NA					
	er day				
Data Source: (CH	RG)				
Cost Breakdown:			Utilization %		
Ownership Cost/Hour:		\$66.14	NA		
Operating Cost/Hour:		\$63.91	100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.52	NA		
MATERIAL QUANT Initial Volume: <u>391,</u> Swell factor: 1.00	879				
Loose volume: 391 ,	879 LCY				
Source of estimated volu	ume: 1' over 2	43 acres.			
Source of estimated swe	ll Cat Hand	lbook			
factor:					
HOURLY PRODUCT	<u>'ION</u>				
Average push distance:	200 feet				
Unadjusted hourly production:	289.3 LCY	/hr			
Materials consistency description:	Loose	stockpile 1.2			
Average push gradient:	0 %				
Average site altitude:	11,300 feet				
Material weight:	1,600 lbs/LCY				
Weight description:	Top Soil				

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.100	(50% SL)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.900	(SSD-FC)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Adjusted unit production:	307.64 LCY/hr
Adjusted fleet production:	922.92 LCY/hr

Fleet size:	3 Dozer(s)	
Unit cost:	\$0.558/LCY	_

Total job time:	424.61 Hours
Total job cost:	\$218,548

Task description:	N40_OSF, Regr	ade top to di	ain, slopes 2h:1v		
e: Climax Mine	Pe	rmit Action:	March 2019	Permit/Job	t: <u>M1977493</u>
PROJECT IDENTIF	ICATION				
Task #: D01 Date: <u>3/12/2019</u> User: JLE	State:	Colorado Summit			None NA
Agency or orga	nization name: DF	RMS			
HOURLY EQUIPMI					
	at D9T - 9SU				
Horsepower: 40)5		-		
	emi-Universal		-		
Attachment: N.			-		
	per day		-		
Data Source: (C	CRG)		-		
Cost Breakdown:		I			
		¢110.70	<u>Utilization %</u>		
Ownership Cost/Hour:		\$110.70	NA		
Operating Cost/Hour:		\$95.46	100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.52	NA		
	1,708				
Swell factor: <u>1.0</u> Loose volume: <u>351</u>	00 1 ,708 LCY				
Source of estimated vol		— 023 Mine Pla	un, Rev. Feb 2019		
Source of estimated sw factor:	ell Cat Hand	book			
HOURLY PRODUC	<u>TION</u>				
Average push distance:	200 feet				
Unadjusted hourly production:	700.0 LCY	/hr			
Materials consistency description:	Compa	cted fill or er	nbankment 0.9		
Average push gradient:	15 %				
Average site altitude:	11,500 feet				
Material weight:	3,300 lbs/LCY				
Weight description:	Decomposed rock	- 75% Rock,	, 25% Earth		

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.200	(SLOT)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(SSD-AC)
Push gradient:	0.666	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.697	(CAT HB)
Blade type:	1.000	(PAT)

Adjusted unit production:	174.79 LCY/hr
Adjusted fleet production:	699.16 LCY/hr

Fleet size:	4 Dozer(s)	
Unit cost:	\$1.417/LCY	-

Total job time:	503.04 Hours
Total job cost:	\$498,383

TRUCK/LOADER TEAM WORK

Task description:	North 4	0 OSF. Load/Ha	ul Topsoil, 6" C	over		
Site: Climax Mine Permit Action			ion: March 201	9	Permit/Job#:	M1977493
PROJECT IDEN	TIFICATION					
					previation: No	
Date: 3/14/ User: JLE	/2019 0	County: Summ	uit		Filename: NA	L
	·	DDMC				
Agency or	organization nan	ne: DRMS				
HOURLY EQUI	PMENT COST	-		Shift ba	sis: <u>1 per day</u>	
			Equipment Descr	iption		
Т	ruck Loader Tea					
	ort Equipment -L		Г 950Н D6T XL			
Supp		mp Area: NA	DOIAL			
Road M	aintenance – Moto		Г 12М			
			ter Tanker, 5,000	Gal.		
Cost Breakdown:	Truck/Loa			Equipment		ance Equipment
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	100	NA	100	100
Ownership cost/hour:	\$66.13	\$26.14	\$52.66	NA	\$30.73	\$25.30
Operating cost/hour:	\$55.75	\$30.84	\$46.34	NA	\$30.60	\$36.60
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$0.00	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$0.00	NA	\$0.00	\$0.00
Operator cost/hour:	\$31.17	\$40.90	\$41.52	NA	\$28.69	\$21.23
Unit Subtotals:	\$153.05	\$97.89	\$140.52	NA	\$90.02	\$83.13
Number of Units:	2	1	1	0	1	1
Group Subtotals:	Work:	\$403.99	Support:	\$140.52	Maint:	\$173.15

Total work team cost/hour: \$717.66

MATERIAL QUANTITIES

Initial volume:	64,533	CCY Swe	ell factor:	1.000
Loose volume:	64,533	LCY		
Source	e of estimated volume:	12" of Cover over	30 acres, 50	0% Biosolids and 50 % Topsoil
Source of	estimated swell factor:	Cat Handbook		
Material Purchase Cost:		\$0.00		
	Total Cost:	\$0.00		

HOURLY PRODUCTION

Truck Capacity:

Truck Payload (weight) Basi	<u>s:</u>
Material weight:	1,600
Description:	Top Soil
Rated Payload:	87,000

Pounds/LCY
Pounds

Payload Capacity: 54.38 LCY

Truck Bed (volume) Basis:						
Struck Volume:	24.20 I	LCY				
Heaped Volume:	31.40 I	LCY				
Average Volume:	27.80 I	LCY				
Adjusted Volume:	31.40 I	LCY				
Final T	ruck Volume B	ased on Number o	of Loader Passes.	31.61	LCY	
Loading Tool Capacity	ruck volume D		i Louder i usses.	51.01		
			Bucl	ket Size Class:	NA	
Rated Capacity:	4.300	LCY (heaped))			_
Bucket Fill Factor:	1.050	Other - moist	loam (100	-110%) 1.050		
Adjusted Capacity:	4.515	LCY				
Job Condition Corrections:			Site Altitude (ft.):	11300 feet		
	Truck	Loader	Source			
Altitude Adj:	0.600	1.000	(CAT HI			
Job Efficiency:	0.830	0.830	(CAT HI	· · · · · · · · · · · · · · · · · · ·		
			``````````````````````````````````````			
Net Correction:	0.498	0.830				
Loading Tool Cycle Time:	Νι	umber of Loading	Tool Passes Requ	uired to Fill	7	passes
Excavators and Front Shovels		C	1	Truck:	7	1
Machine Cycle Time vs. Selected Value w	Job Condition					
Track Loaders – N						
	inderial Deserip					
Cycle Time Elements (min.):						
Load: NA	Ma	neuver: NA		Dump: 0.1	00	
Wheel and Track	Loaders - Unad	ljusted Basic Load	•	oad, dump, naneuver):	0.500 ^{mir}	nutes
Cycle Time Factors				Factor (min.)	Source	
Material:	Mixed materia	al 0.02		0.020	(Cat HB)	
Stockpile:	Dumped by tr			0.020	(Cat HB)	
Truck Ownership:	Common own	ership of trucks a	nd loaders -	-0.040	(Cat HB)	
	0.04				· · · ·	
Operation: Dump Target:	Constant oper Nominal targe			-0.040	(Cat HB) (Cat HB)	
Dump Target.	Nominal targe		me Adjustment:	-0.040	minutes	
			der Cycle Time:	0.460	minutes	
			Fime per Truck:	2.860	minutes	
			I			
<u>Truck Cycle Time:</u>						
Truck Exchange Time:		Minutes	Ū.	for site altitude:	1.000	Minutes
Truck Load Time:	2.860	Minutes	Adjusted	for site altitude:	2.860	Minutes
Hack Loud Hille.	2.800	Willutes	Aujusicu	for site annual.	2.800	Minutes

<u>Truck Travel (Haul & Return) Time:</u> <u>maintained 3.0</u>

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

I	Haul Route								
	Seg #	Haul Dist	ance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
		(Ft)			(%)	(%)	(fpm)	Time (min)	
_	1	2830.00		0.00	3.00	3.00	3005	1.734	
						Haul Time:	1.734	minutes	
I	Return Rou	ite:				Huur Hine.	1.754		
Γ	Seg #	Haul Dist	ance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
	-	(Ft)			(%)	(%)	(fpm)	Time (min)	
	1	2830.00		0.00	3.00	3.00	3005	1.109	
						Return Time:	1.109	minute	s
					Total Tru	ck Cycle Time:	8.370	minute	s
Le	oading Too	ol unit							
20	0	iction	491.27	LCY/Hour		Adjusted for jo	ob efficiency:	407.75	LCY/Hour
Truck	Unit Produ	iction							
			226.57	LCY/Hour		Adjusted for jo	ob efficiency:	188.05	LCY/Hour
Optima	l No. of Tr	ucks:	2	Truck(s)		Selected Numb	per of Trucks:	2	Truck(s)
				Adjusted	hourly truck	team productio	n: 376.	10 LCY/	Hour
				Adjusted single	truck/loader	team productio	n: 376.	10 LCY/	Hour
			A	djusted multiple	e truck/loader	team productio	n: <b>376.</b>	10 LCY/	Hour
<u>.</u>	JOB TIM	IE AND C	OST						
	Fleet	size:	1	Team(s)	Т	otal job time:	171.5	8 Hor	urs
	Unit o	cost:	\$1.908	/LCY	Г	Total job cost:	\$123,1	39	

		March 2019	Permit/Jo	b#: <u>M1977493</u>
ROJECT IDENTIFITask #:D03Date:3/14/2019User:JLE	State: Colorado		Abbreviation: Filename:	None NA
Agency or organ	nization name: DRMS			<u> </u>
IOURLY EQUIPME	<u>ENT COST</u>			
Basic Machine: Ca	t D7R DS XR Series II	_		
Horsepower: 240		_		
•1	mi-Universal	_		
Attachment: NA		_		
	ber day	_		
Data Source: (Cl	RG)	_		
Cost Breakdown:				
<u></u>		Utilization %		
Ownership Cost/Hour:	\$61.41	NA		
Operating Cost/Hour:	\$54.22	100		
Ripper own.				
Cost/Hour:	\$0.00	NA		
Ripper op. Cost/Hour:	\$0.00	0		
Operator Cost/Hour:	\$41.52	NA		
Total unit Cost/Hour: Total Fleet Cost/Hour:	\$157.15 <b>\$628.59</b>			
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: <u>129</u> Swell factor: <u>1.00</u>	\$628.59 ITIES ,067			
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: <u>129</u> Swell factor: <u>1.00</u>	\$628.59 ITIES ,067 00 ,067 LCY ume: 12" over 80 acres			
Total Fleet Cost/Hour:         MATERIAL QUANT         Initial Volume:       129         Swell factor:       1.00         Loose volume:       129         Source of estimated volt       Source of estimated swell	\$628.59         ITIES         ,067         00         ,067 LCY         ume:       12" over 80 acres         ell       Cat Handbook			
Total Fleet Cost/Hour:         MATERIAL QUANT         Initial Volume:       129         Swell factor:       1.00         Loose volume:       129         Source of estimated volu       129         Source of estimated swell       129         State       129         State       120         State       120         State       120         State       120         State       120         State       120         State       120	\$628.59         ITIES         ,067         00         ,067 LCY         ume:       12" over 80 acres         ell       Cat Handbook			
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 129 Swell factor: 1.00 Loose volume: 129 Source of estimated volu- Source of estimated volu- Source of estimated swe factor: HOURLY PRODUCT Average push distance: Unadjusted hourly	\$628.59         ITIES         ,067         00         ,067 LCY         ume:       12" over 80 acres         ell       Cat Handbook         CION         200 feet			
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 129 Swell factor: 1.00 Loose volume: 129 Source of estimated volu Source of estimated volu Source of estimated swe factor: HOURLY PRODUCT Average push distance: Unadjusted hourly production: Materials consistency description: Average push gradient:	\$628.59         ITIES         ,067         )0         ,067 LCY         ume:       12" over 80 acres         ell       Cat Handbook         Cat Handbook         Ell         200 feet       410.8 LCY/hr         Loose stockpile 1.2       0 %			
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 129 Swell factor: 1.00 Loose volume: 129 Source of estimated volu Source of estimated volu Source of estimated swe factor: HOURLY PRODUCT Average push distance: Unadjusted hourly production: Materials consistency description: Average push gradient: Average site altitude:	\$628.59         ITIES         ,067         )0         ,067 LCY         ume:       12" over 80 acres         ell       Cat Handbook         CION         200 feet         410.8 LCY/hr         Loose stockpile 1.2         0 %         11,500 feet			
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 129 Swell factor: 1.00 Loose volume: 129 Source of estimated volu Source of estimated volu Source of estimated swe factor: HOURLY PRODUCT Average push distance: Unadjusted hourly production: Materials consistency description: Average push gradient:	\$628.59         ITIES         ,067         )0         ,067 LCY         ume:       12" over 80 acres         ell       Cat Handbook         Cat Handbook         Ell         200 feet       410.8 LCY/hr         Loose stockpile 1.2       0 %			

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.100	(50% SL)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Adjusted unit production:	388.33 LCY/hr
Adjusted fleet production:	1553.32 LCY/hr

Fleet size:	4 Dozer(s)
Unit cost:	\$0.405/LCY

Total job time:	83.09 Hours				
Total job cost:	\$52,231				
Climax Mine	Perr	nit Action:	March 2019	Permit/Jo	b#: <u>M1977493</u>
---------------------------------------------------------------------	--------------------	-------------	---------------	---------------	---------------------
ROJECT IDENTIFI Task #: D03		Colorado		Abbreviation:	None
Date: 3/14/2019		Summit		Filename:	NA
User: JLE					
Agency or organ	nization name: DRM	AS			
HOURLY EQUIPME	NT COST				
Basic Machine: Cat	D7R DS XR Series I	[			
Horsepower: 240					
	ni-Universal				
Attachment: NA Shift Basis: 1 p					
	er day RG)				
Cost Breakdown:					
			Utilization %		
Ownership Cost/Hour:		\$61.41	NA		
Operating Cost/Hour:		\$54.22	100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.52	NA		
MATERIAL QUANTInitial Volume:129,Swell factor:1.00Loose volume:129,	067				
Source of estimated volu	12" over 8	) acres			
Source of estimated voit Source of estimated swe					
factor:					
HOURLY PRODUCT	<u>'ION</u>				
Average push distance:	200 feet				
Unadjusted hourly production:	410.8 LCY/h	r			
Materials consistency description:	Loose sto	ockpile 1.2			
Average push	0 %				
gradient:		_			
Average site altitude:	11,500 feet	_			
Material weight:	1,600 lbs/LCY				
	Top Soil				
Weight description:	Top Soil				

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.100	(50% SL)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Adjusted unit production:	388.33 LCY/hr
Adjusted fleet production:	1553.32 LCY/hr

Fleet size:	4 Dozer(s)
Unit cost:	\$0.405/LCY

Total job time:	83.09 Hours
Total job cost:	\$52,231

lConstructio	on			Task No.	D04					
								#	Variable	
21-Mar-19	Permit	M1977493	Site:	Climax Mir	ne			#	Formula	
JLE			State : Colorado			County:	Lake/Summit			
orado Divisio	on of Rec	lamation, Mining	g and Safety							
Mar-19				Task Desc	ription: N40 (	OSF Constru	ct Post-Mining Ch	annels		
Length	Depth	Width (bottom)	Side Slopes	Width (Top)	Excavated Vol./LF	Excavated Vol. (total)	Riprap Thickness (2xD50)	Perimeter, P	Area for Geotextile (excl. anchor trenches)	Riprap Vol.
										(CY)
13,300	3.0	10.0	3.0				**Climax			**Climax
										0
									1	0
10.000				0.0	0.0000			0.00	1	0
13,300						28,078			0	0
	**Geote	extile (SY incl.):	29,542		**Riprap (CY):		19,695		Excavation (CY):	28,078
		Geotextile (SY):	\$ 0.94		***	 Riprap (CY):	\$ 32.08	Exca	vation (CY):	\$ -
			\$ 0.26				***			\$ 2.40
			\$ -				***			\$ 1.39
	33 3	32 1916 1500			31 37 1310 01	00		31 23 16	42 0310	
	Geotexti	ile (\$):	\$ 35,450.40		Riprap (\$):		\$ 631,815.60	Excavation (	CY):	\$ 106,414.78
	Geotexti	ile (Hrs):	94.5		Riprap (Hrs	):	2,541.3	Excavation ()	Hrs):	701.94
					CY/HR	7.750		CY/HR	40.00	
<b>\$ per Unit</b> \$ 14.50	<b>SF</b> 23240	Total Cost           \$ 336,980.00								
0			3,337.77							
ng Channel	Reconstr	uction Cost:	\$ 1,110,660.78							
	21-Mar-19 JLE prado Divisio Mar-19 Length (ft) 13,300 13,300 13,300	Length       Depth         (ft)       (ft)         13,300       3.0         13,300       3.0         13,300       3.0         333       333         Geotexti       333         SY/HR       Sy/HR         \$ per Unit       SF         \$ 14.50       23240         ag Channel Reconstructure       345	21-Mar-19PermitM1977493JLEImage: mathematic of the second s	21-Mar-19PermitM1977493Site: State : ColoradoJLE $\begin{tabular}{lllllllllllllllllllllllllllllllllll$	21-Mar-19PermitM1977493Site:Climax MinJLEState : ColoradoState : Coloradoorado Division of Reclamation, Mining and SafetyTask DescMar-19Task DescMar-19Task Desc(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)(h)<	21-Mar-19         Permit         M1977493         Site:         Climax Mine           JLE         State : Colorado         Task Description: N40 (0)           mar-19         Task Description: N40 (0)         Task Description: N40 (0)           Mar-19         Width         Side Slopes         Width         Excavated           Length         Depth         (bottom)         Side Slopes         C(max Mine         Vol /LF           (ft)         (ft)         (ft)         (ft)         (CY)         28.0         2.1111           0         0.0         0.00         0.0         0.0000         0.0000           13,300         3.0         10.0         3.0         28.0         2.1111           0         0         0.0         0.0000         0.0000         0.0000           13,300         -         -         -         -         -           **Geotextile (SY incl.):         29,542         **Riprap (CY):         ****           S         0.26         -         -         -         -           Geotextile (SY):         \$ 0.94         ****         \$ 13 13 1310 01         -           Geotextile (SY:         \$ 0.94         \$ 13 137 1310 01         -         -	21-Mar-19       Permit       M1977493       Site:       Climax Mine       County:         JLE       State : Colorado       State : Colorado       County:       County:         Mar-19       Task Description: N40 OSF Construction       Task Description: N40 OSF Construction       Karated         Mar-19       Width       Side Slopes       Width       Excavated       Excavated         (ft)       (ft)       (ft)       (ft)       (ft)       (Ctrip)       Z8.00       2.1111       28.078         3.00       3.0       10.0       3.0       28.00       2.1111       28.078         interm       interm       interm       interm       interm       28.078       28.078         interm       interm       interm       interm       interm       28.078       28.078         interm       interm       interm       interm       interm       interm       28.078         interm       interm       interm       interm       interm       interm       28.078         interm       interm       interm       interm       interm       interm       28.078         interm       interm       interm       interm       interm       28.078 <tr< td=""><td>$\begin{array}{c c c c c c c c c c c c c c c c c c c$</td><td>21-Mar-19       Permit       M1977493       Site:       Climax Mine       #         JLE       State : Colorado       County:       Lake/Summit       #         Mar-19       Task Description: N40 OSF Construct Post-Mining Channels       Perimeter,         Mar-19       Task Description: N40 OSF Construct Post-Mining Channels       Perimeter,         (ft)       (ft)       (ft)       (ft)       (ft)       (ft)         (ft)       (ft)       (ft)       (XH:1V)       (ft)       (CY)       (CY)         (ft)       (ft)       (ft)       (CY)       (ft)       (ft)       (ft)       (ft)         13,300       30       10.0       3.0       28,0       2,1111       28,078       **Cimax       28,97         **Geotextile (SY incl.):       29,542       (CY):       -       28,078       0.0       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       <t< td=""><td>$\begin{array}{ c c c c c c c c c c c c c c c c c c c$</td></t<></td></tr<>	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	21-Mar-19       Permit       M1977493       Site:       Climax Mine       #         JLE       State : Colorado       County:       Lake/Summit       #         Mar-19       Task Description: N40 OSF Construct Post-Mining Channels       Perimeter,         Mar-19       Task Description: N40 OSF Construct Post-Mining Channels       Perimeter,         (ft)       (ft)       (ft)       (ft)       (ft)       (ft)         (ft)       (ft)       (ft)       (XH:1V)       (ft)       (CY)       (CY)         (ft)       (ft)       (ft)       (CY)       (ft)       (ft)       (ft)       (ft)         13,300       30       10.0       3.0       28,0       2,1111       28,078       **Cimax       28,97         **Geotextile (SY incl.):       29,542       (CY):       -       28,078       0.0       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00 <t< td=""><td>$\begin{array}{ c c c c c c c c c c c c c c c c c c c$</td></t<>	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$

	P	ermit Action:	March 2019	Permit/Jo	b#: <u>M1977493</u>
ROJECT IDENTIFI	<b>ICATION</b>				
Task #: E01	State:	Colorado		Abbreviation:	None
Date: $3/14/2019$		Summit		Filename:	M493-E01
User: JLE					
Agency or organ	nization name: <u>D</u>	RMS			
IOURLY EQUIPME	ENT COST				
Basic Machine: Ca	ut D9T - 9SU				
Horsepower: 40:					
	mi-Universal				
	shank ripper				
	per day				
	RG)				
ost Breakdown:					
			Utilization %		
Ownership Cost/Hour:		\$110.70	NA		
Operating Cost/Hour:		\$95.46	100		
Ripper own.		\$12.36	NA		
Cost/Hour:					
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.52	NA		
Total Fleet Cost/Hour:	\$1,040.18				
IATERIAL QUANT         Initial Volume:       2,20         Swell factor:       1.00	<b><u>TTIES</u></b> 05,777				
IATERIAL QUANTInitial Volume:2,20Swell factor:1.00Loose volume:2,20	<b>TITIES</b> 05,777 00 <b>05,777</b> LCY	  Rev. Feb 2019	Estimate, 2023 Mine	Plan	
IATERIAL QUANT         Initial Volume:       2,20         Swell factor:       1.00	CITIES           05,777           00           05,777 LCY           ume:         Climax		Estimate, 2023 Mine	Plan	
IATERIAL QUANTInitial Volume:2,20Swell factor:1.00Loose volume:2,20Source of estimated volume2,20	CITIES           05,777           00           05,777 LCY           ume:         Climax		Estimate, 2023 Mine	Plan	
Initial Volume:       2,20         Swell factor:       1.00         Loose volume:       2,20         Source of estimated vol       3,20         Source of estimated sweet       3,20	CITIES           05,777           00           05,777 LCY           ume:         Climax		Estimate, 2023 Mine	Plan	
Initial Volume:       2,20         Swell factor:       1.00         Loose volume:       2,20         Source of estimated vol       3,20         Source of estimated sweet       3,20	CITIES           05,777           00           05,777 LCY           ume:         Climax           ell         Cat Han		Estimate, 2023 Mine	<u>Plan</u>	
IATERIAL QUANT         Initial Volume:       2,20         Swell factor:       1.00         Loose volume:       2,20         Source of estimated vol       2,20         Source of estimated vol       500         Source of estimated vol       500         Source of estimated swelfactor:       100         IOURLY PRODUCT       100	CITIES           05,777           00           05,777 LCY           lume:         Climax           ell         Cat Han           Image:         Cat Han		Estimate, 2023 Mine	<u>Plan</u>	
Initial Volume:       2,20         Swell factor:       1.00         Loose volume:       2,20         Source of estimated vol       2,20         Source of estimated vol       5000000000000000000000000000000000000	CITIES           05,777           00           05,777 LCY           ume:         Climax           ell         Cat Han	dbook	Estimate, 2023 Mine	<u>Plan</u>	
Initial Volume:       2,20         Swell factor:       1.00         Loose volume:       2,20         Source of estimated voltor:       2,20         Source of estimated voltor:       2,20         Source of estimated swelfactor:       2,20         Initial Volume:       2,20         Source of estimated voltor:       2,20         Source of estimated swelfactor:       2,20         Initial Volume:       2,20         Source of estimated swelfactor:       2,20         Initial Volume:       2,20         Source of estimated swelfactor:       300         Initial Volume:       300	CITIES           05,777           00           05,777 LCY           lume:         Climax           ell         Cat Han           Image:         Cat Han	dbook	Estimate, 2023 Mine	<u>Plan</u>	
Initial Volume:       2,20         Swell factor:       1.00         Loose volume:       2,20         Source of estimated vol       2,20         Source of estimated vol       5000000000000000000000000000000000000	CITIES           05,777           00           05,777 LCY           ume:         Climax           ell         Cat Han	dbook	Estimate, 2023 Mine	<u>Plan</u>	
Initial Volume:       2,20         Swell factor:       1.00         Loose volume:       2,20         Source of estimated volt       2,20         Source of estimated volt       500         Source of estimated volt       500         Source of estimated sweet       600         Average push distance:       100         Unadjusted hourly       100         production:       100	CITIES           05,777           00           05,777 LCY           lume:         Climax           ell         Cat Han	dbook K/hr		<u>Plan</u>	
Initial Volume:       2,20         Swell factor:       1.00         Loose volume:       2,20         Source of estimated vol       2,20         Source of estimated vol       300         Source of estimated swelfactor:       100         Initial Volume:       2,20         Source of estimated vol       300         Source of estimated swelfactor:       100         Initial Volume:       100         Average push distance:       100         Unadjusted hourly       100         Materials consistency       100	CITIES           05,777           00           05,777 LCY           lume:         Climax           ell         Cat Han	dbook		<u>Plan</u>	
Initial Volume:       2,20         Swell factor:       1.00         Loose volume:       2,20         Source of estimated volt       2,20         Source of estimated volt       500         Source of estimated volt       500         Source of estimated sweet       600         Average push distance:       100         Unadjusted hourly       100         production:       100	CITIES           05,777           00           05,777 LCY           lume:         Climax           ell         Cat Han	dbook K/hr		<u>Plan</u>	
IATERIAL QUANT         Initial Volume:       2,20         Swell factor:       1.00         Loose volume:       2,20         Source of estimated vol       3,00         Source of estimated vol       5,00         Source of estimated vol       3,00         Source of estimated swelfactor:       100         IOURLY PRODUCT       Average push distance:         Unadjusted hourly       production:         Materials consistency       description:	TTIES         05,777         00         05,777 LCY         lume:       Climax         ell       Cat Han	dbook K/hr		<u>Plan</u>	
IATERIAL QUANT         Initial Volume:       2,20         Swell factor:       1.00         Loose volume:       2,20         Source of estimated vol       2,20         Source of estimated vol       300         Source of estimated vol       300         Source of estimated swelfactor:       100         IOURLY PRODUCT       Average push distance:         Unadjusted hourly       production:         Materials consistency       description:         Average push       100	CITIES           05,777           00           05,777 LCY           lume:         Climax           ell         Cat Han	dbook K/hr		Plan	
IATERIAL QUANT         Initial Volume:       2,20         Swell factor:       1.00         Loose volume:       2,20         Source of estimated vol       2,20         Source of estimated vol       300         Source of estimated vol       300         Source of estimated swelfactor:       100         IOURLY PRODUCT       Average push distance:         Unadjusted hourly       production:         Materials consistency       description:         Average push       gradient:	200         200         200         200         200         200         200         Fill         200         feet         700.0         LCY         200         feet         700.0         LCY         200         feet         700.0         LCY         200         feet         700.0         LCY         Rock,         200         feet         700.0         LCY         Rock,         200         feet         700.0         LCY         Rock,         Rock, <t< td=""><td>dbook K/hr</td><td></td><td><u>Plan</u></td><td></td></t<>	dbook K/hr		<u>Plan</u>	
IATERIAL QUANT         Initial Volume:       2,20         Swell factor:       1.00         Loose volume:       2,20         Source of estimated vol       2,20         Source of estimated vol       300         Source of estimated vol       300         Source of estimated swelfactor:       100         IOURLY PRODUCT       Average push distance:         Unadjusted hourly       production:         Materials consistency       description:         Average push       100	TTIES         05,777         00         05,777 LCY         lume:       Climax         ell       Cat Han	dbook K/hr		<u>Plan</u>	
IATERIAL QUANT         Initial Volume:       2,20         Swell factor:       1.00         Loose volume:       2,20         Source of estimated volt       300         Source of estimated volt       300         Source of estimated swelfactor:       100         IOURLY PRODUCT       Average push distance:         Unadjusted hourly       production:         Materials consistency       description:         Average push       gradient:         Average site altitude:       300	TTIES         05,777         00         05,777 LCY         ume:       Climax         ell       Cat Han         EION         200 feet         700.0 LCY         Rock,         -30 %         11,800 feet	dbook K/hr		<u>Plan</u>	
IATERIAL QUANT         Initial Volume:       2,20         Swell factor:       1.00         Loose volume:       2,20         Source of estimated vol       2,20         Source of estimated vol       300         Source of estimated vol       300         Source of estimated swelfactor:       100         IOURLY PRODUCT       Average push distance:         Unadjusted hourly       production:         Materials consistency       description:         Average push       gradient:	200         200         200         200         200         200         200         Fill         200         feet         700.0         LCY         200         feet         700.0         LCY         200         feet         700.0         LCY         200         feet         700.0         LCY         Rock,         200         feet         700.0         LCY         Rock,         200         feet         700.0         LCY         Rock,         Rock, <t< td=""><td>dbook K/hr</td><td></td><td><u>Plan</u></td><td></td></t<>	dbook K/hr		<u>Plan</u>	

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.800	(CAT HB)
Dozing method:	1.200	(SLOT)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.900	(SSD-FC)
Push gradient:	1.601	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.697	(CAT HB)
Blade type:	1.000	(PAT)

Adjusted unit production:	420.14 LCY/hr
Adjusted fleet production:	1680.56 LCY/hr

Fleet size:	4 Dozer(s)
Unit cost:	\$0.619/LCY

Total job time:	1,312.52 Hours
Total job cost:	\$1,365,268

Climax Mine, M-1977-493

# TRUCK/LOADER TEAM WORK

Task description:	McNult	y OSF. Load	/Haul T	opsoil, 6" C	over			
Site: Climax Mine		Permit	Action:	March 201	9	Permit/Job#:	M1977493	
PROJECT IDENI	TIFICATION							
Task #: E02A			lorado			previation: No		
Date: $3/14/2$ User: JLE	019 0	County: Su	mmit			Filename: NA	L	
Agency or c	organization nam	ne: DRMS						
HOURLY EQUIP	MENT COST				Shift ba	sis: <u>1 per day</u>		
			Equir	oment Descr				
Tr	uck Loader Tear	n -Truck:	Cat 740		iption			
			CAT 950					
Suppor	rt Equipment -Lo		Cat D6T	XL				
Boad Mai	-Du Intenance –Moto		NA CAT 121	Л				
Koau wa				unker, 5,000	Gal.			
		I						
Cost Breakdown:	Cost Breakdown: Truck/Loader				Equipment			
	Truck	Loader	Lo	ad Area	Dump Area	Motor Grader	Water Truck	
%Utilization-machine:	100	10	00	100	NA	100	100	
Ownership cost/hour:	\$66.13	\$26.	14	\$52.66	NA	\$30.73	\$25.30	
Operating cost/hour:	\$55.75	\$30.8	34	\$46.34	NA	\$30.60	\$36.60	
%Utilization-riper:	NA		0	NA	NA	NA	NA	
Ripper own. cost/hour:	NA	\$0.0	00	\$0.00	NA	\$0.00	\$0.00	
Ripper op. cost/hour:	NA	\$0.0	00	\$0.00	NA	\$0.00	\$0.00	
Operator cost/hour:	\$31.17	\$40.9	<del>9</del> 0	\$41.52	NA	\$28.69	\$21.23	
Unit Subtotals:	\$153.05	\$97.8	39	\$140.52	NA	\$90.02	\$83.13	
Number of Units:	2		1	1	0	1	1	
Group Subtotals:	Work:	\$403.99		Support:	\$140.52	Maint:	\$173.15	
Total work team cost/ MATERIAL QUA								

Initial volume:         289,352           Loose volume:         289,352	CCY     Swell factor: 1.000       LCY
	12" of Cover over 359 acres, 50% Biosolids and 50 % Topsoil
Source of estimated swell factor:	Cat Handbook
Material Purchase Cost:	\$0.00
Total Cost:	\$0.00

# **HOURLY PRODUCTION**

Truck Capacity:							
Truck Payload (weight) Basis			D 1/7				
Material weight:	1,600		Pounds/L	ĽΥ			
Description:	Top Soil		D 1.				
Rated Payload:	87,000		Pounds				
Payload Capacity:	54.38		LCY				
Truck Bed (volume) Basis:							
Struck Volume:	24.20	LCY					
Heaped Volume:	31.40	LCY					
Average Volume:	27.80	LCY					
Adjusted Volume:	31.40	LCY					
Aujusted Volume.	51.40	LCI					
Final	Fruck Volume	Based on Nu	umber of Lo	ader Passes:	31.61	LCY	
Loading Tool Capacity							
Poted Conseitur	4 200		haamad)	Buck	et Size Class:	NA	-
Rated Capacity: Bucket Fill Factor:	4.300		heaped) - moist loan	(100	110%) 1.050		
Adjusted Capacity:	4.515	LCY	- moist ioan	1 (100-	110%) 1.050		
Aujusted Capacity.	4.515						
Job Condition Corrections:	<u> </u>		Site	Altitude (ft.):	<u>11500</u> feet		
	Truck	Load		Source			
Altitude Adj:	0.600	1.00		(CAT HE			
Job Efficiency:	0.830	0.83	30	(CAT HE	3)		
Net Correction:	0.498	0.83	30				
Loading Tool Cycle Time:	1	Number of L	oading Too	l Passes Requ	ired to Fill	7 I	basses
Excavators and Front Shove	<u>ls:</u>				Truck:	,	
Machine Cycle Time v Selected Value v			NA NA				
Track Loaders –		-	1 1/2 1				
Cycle Time Elements (min.):		·					
Load: NA	N	laneuver:	NA		Dump: 0.1	00	
Wheel and Track	k Loaders - Un	adjusted Bas	ic Loader C	•	oad, dump, naneuver):	0.500 minu	ites
Cycle Time Factors					Factor (min.)	Source	
Material:	Mixed mater	rial 0.02			0.020	(Cat HB)	_
Stockpile:	Dumped by				0.020	(Cat HB)	_
Truck Ownership:	Common ov 0.04		rucks and lo	oaders -	-0.040	(Cat HB)	_
Operation:	Constant op	eration _0.04			-0.040	(Cat HB)	-
Dump Target:	Nominal tar		r		0.000	(Cat HB)	-
	r tonniar tal		ycle Time A	diustment	-0.040	minutes	_
			ed Loader C		0.460	minutes	
			Load Time		2.860	minutes	

#### Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	1.000	Minutes
Truck Load Time:	2.860	Minutes	Adjusted for site altitude:	2.860	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.667	Minutes

Truck Travel (Haul & Return) Time: maintained 3.0 Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3100.00	0.00	3.00	3.00	3005	1.824

				Haul Time:	1.824	minutes
Return Ro Seg #	ute: Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3100.00	0.00	3.00	3.00	3005	1.199

Return Time:	1.199	minutes
Total Truck Cycle Time:	8.550	minutes

Loading Tool unit Production Truck Unit Production	491.27	LCY/Hour	Adjusted for job e	fficiency:	407.75	_ LCY/Hour
	221.80	LCY/Hour	Adjusted for job e	fficiency:	184.09	LCY/Hour
Optimal No. of Trucks:	2	Truck(s)	Selected Number of	Selected Number of Trucks:		
		Adjusted hour djusted single truck usted multiple truck	368.18 368.18 <b>368.18</b>	LCY/H LCY/H LCY/H	Iour	
JOB TIME ANI	D COST					

Fleet size:	1	Team(s)	Total job time:	785.89	Hours
Unit cost:	\$1.949	/LCY	Total job cost:	\$564,000	

Climax Mine, M-1977-493

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# TRUCK/LOADER TEAM WORK

Task description:	McNult	y OSF. Load	/Haul Biosolids, 6'	' Cover		
Site: Climax Mine		Permit	Action: March 20	019	Permit/Job	#: <u>M1977493</u>
PROJECT IDEN	TIFICATION					
Task #: E021	3	State: Co	lorado	Abl	previation:	None
	/2019 0	County: Su	mmit		Filename:	NA
User: JLE						
Agency or	organization nan	ne: DRMS				
HOURLY EQUI	PMENT COST	-		Shift ba	asis: <u>1 per day</u>	r -
			Equipment Desc	ription		
Т	ruck Loader Tear		Cat 740			
			CAT 950H			
Supp	ort Equipment -L		Cat D6T XL NA			
Road M	aintenance – Moto		CAT 12M			
itoud ivi			Water Tanker, 5,000	) Gal.		
Cost Breakdown:	Truck/Loa	der Team	11	t Equipment		tenance Equipment
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	10	00 100	NA	1	00 100
Ownership cost/hour:	\$66.13	\$26.1	\$52.66	NA	\$30.	73 \$25.30
Operating cost/hour:	\$55.75	\$30.8	\$46.34	NA	\$30.	60 \$36.60
%Utilization-riper:	NA		0 NA	NA	N	IA NA
Ripper own. cost/hour:	NA	\$0.0	\$0.00	NA	\$0.	00 \$0.00
Ripper op. cost/hour:	NA	\$0.0	00 \$0.00	NA	\$0.	00 \$0.00
Operator cost/hour:	\$31.17	\$40.9	90 \$41.52	NA	\$28.	69 \$21.23
Unit Subtotals:	\$153.05	\$97.8	\$140.52	NA	\$90.	02 \$83.13
Number of Units:	5		1 1	0		1 1
Group Subtotals:	Work:	\$863.14	Support:	\$140.52	Main	nt: \$173.15
Total work team cos		91	1		1	]

Total work team cost/hour: \$1,176.81

# **MATERIAL QUANTITIES**

Initial volume:289Loose volume:	9,352 <b>289,352</b>	CCY LCY	Swell factor:	1.000
	estimated volume: nated swell factor:	12" of Cove Cat Handbo		50% Biosolids and 50 % Topsoil
Material Purchase Cost:		\$0.00		
	Total Cost:	\$0.00		

# **HOURLY PRODUCTION**

Truck Capacity:							
Truck Payload (weight) Bas Material weight:	1,600		Pounds/LC	v			
Description:	Top Soil		I Oulius/ LC	1			
Rated Payload:	87,000		Pounds				
Payload Capacity:	54.38		LCY				
			-				
Truck Bed (volume) Basis:							
Struck Volume:	24.20	LCY					
Heaped Volume:	31.40	LCY					
Average Volume:	27.80	LCY					
Adjusted Volume:	31.40	LCY					
Final	Truck Volume	Based on Num	ber of Load	er Passes:	31.61	LCY	
Loading Tool Capacity							
				Bucke	et Size Class:	NA	
Rated Capacity:	4.300	LCY (he					
Bucket Fill Factor:	1.050		noist loam	(100-1	110%) 1.050		
Adjusted Capacity:	4.515	LCY					
Job Condition Corrections	<u>:</u>		Site Al	titude (ft.): <u>1</u>	<u>11500</u> feet		
	Truck	Loade	r	Source			
Altitude Adj:	0.600	1.000		(CAT HB)	)		
Job Efficiency:	0.830	0.830		(CAT HB)	)		
Net Correction:	0.498	0.830					
Loading Tool Cycle Time:	1	Number of Loa	ding Tool F	Passes Requi		7	passes
Excavators and Front Shove	els:				Truck:	•	
Machine Cycle Time v							
Selected Value		· _	A				
Track Loaders -		iption:					
Cycle Time Elements (min.)					-		
Load: NA	N	laneuver: N	A		Dump: 0	.100	-
Wheel and Trac	k Loaders - Una	adjusted Basic	Loader Cyc		ad, dump, aneuver):	0.500	minutes
Cycle Time Factors				[	Factor (min.	.) Sour	ce
Material:		rial 0.02			0.020	(Cat H	
Stockpile:					0.020	(Cat H	HB)
Truck Ownership:	Common ow 0.04	nership of true	cks and load	lers -	-0.040	(Cat H	IB)
Operation:		eration -0.04			-0.040	(Cat H	IB)
Dump Target:					0.000	(Cat H	
			le Time Ad	justment:	-0.040	minu	
			Loader Cyc		0.460	minu	tes
		Net L	oad Time p	er Truck:	2.860	minu	tes

#### Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	1.000	Minutes
Truck Load Time:	2.860	Minutes	Adjusted for site altitude:	2.860	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.667	Minutes

Truck Travel (Haul & Return) Time: maintained 3.0 Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route.

Haul Route:									
Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)			
1	17700.00	0.00	3.00	3.00	3005	6.683			

Return Rou	ite:			Haul Time:	6.683	minutes
Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	17700.00	0.00	3.00	3.00	3005	6.057

Return Time:	6.057	minutes
Total Truck Cycle Time:	18.267	minutes

Loading Tool unit						
Production	491.27	LCY/Hour	Adjusted for job ef	ficiency:	407.75	LCY/Hour
Truck Unit Production						
	103.81	LCY/Hour	Adjusted for job ef	ficiency:	86.16	LCY/Hour
-				•		
Optimal No. of Trucks:	5	Truck(s)	Selected Number of	f Trucks:	5	Truck(s)
_			1 4 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	420.92	LOVA	 T.a
			ly truck team production:	430.82	LCY/F	lour
	A	djusted single truck	c/loader team production:	407.75	LCY/F	Iour
	Adj	usted multiple truck	c/loader team production:	407.75	LCY/F	Iour
JOB TIME AND	) COST					

Fleet size:	1	Team(s)	Total job time:	709.62	Hours
Unit cost:	\$2.886	/LCY	Total job cost:	\$835,093	

Climax Mine	Pe	rmit Action:	March 2019	Permit/Job	o#: <u>M1977493</u>
PROJECT IDENTIFI	ICATION				
Task #: E03	State:	Colorado		Abbreviation:	None
Date: 3/14/2019	County:	Summit		Filename:	NA
User: JLE					
Agency or organ	nization name:	RMS			
HOURLY EQUIPME	NT COST				
Basic Machine: Ca	t D7R DS XR Series	II			
Horsepower: 240	0				
<i>•</i> 1	mi-Universal				
Attachment: NA	Α				
	ber day				
Data Source: (Cl	RG)				
Cost Breakdown:					
			Utilization %		
Ownership Cost/Hour:		\$61.41	NA		
Operating Cost/Hour:		\$54.22	100		
Ripper own.		\$0.00	NA		
Cost/Hour:					
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.52	NA		
Swell factor: 1.00	,703				
Source of estimated volu	ume: 12" over	359 acres			
Source of estimated swe					
factor:					
HOURLY PRODUCT	TION				
Average push distance: Unadjusted hourly production:	200 feet 410.8 LCY	/hr			
Materials consistency description:	Loose	stockpile 1.2			
Average push gradient:	0 %				
Average site altitude:	11,500 feet				
Material weight:	1,600 lbs/LCY				
Weight description:	Top Soil				
" eight description.	100 001				

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.100	(50% SL)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Adjusted unit production:	388.33 LCY/hr			
Adjusted fleet production:	1553.32 LCY/hr			

Fleet size:	4 Dozer(s)		
Unit cost:	\$0.405/LCY		

Total job time:	372.56 Hours
Total job cost:	\$234,188

Postmining Channe	l Constructi	on			Task No.	E04					
									#	Variable	
Date :	21-Mar-19	Permit	M1977493	Site:	Climax Mir	ne			#	Formula	
User:	JLE			State : Colorado			County:	Lake/Summit			
Agency Name: Colo			, Mining and Safe	ty							
Permit Action:	Mar-19				Task Desc	ription: McN	lulty OSF, Co	nstruct Post-Mini	ng Channels		
Channel ID	Length	Depth	Width (bottom)	Side Slopes	Width (Top)	Excavated Vol./LF	Excavated Vol. (total)	Riprap Thickness (2xD50)	Perimeter, P	Area for Geotextile (excl. anchor trenches)	Riprap Vol.
	(ft)	(ft)	(ft)	(XH:1V)	(ft)	(CY)	(CY)	(ft)	(ft)	(sf)	(CY)
Lined diversion											
channels	30,400	3.0	10.0	3.0	28.0	2.1111	64,178	**Climax	28.97	**Climax	<b>#VALUE!</b>
Down Drain											
Channel	4,800	3.0	10.0	3.0	28.0	2.1111	10,133	**Climax	28.97	**Climax	<b>#VALUE!</b>
					0.0	0.0000	0		0.00	0	0
					0.0	0.0000	0		0.00	0	0
Totals	35,200						74,311			0	#VALUE!
Materials Needed:		**Geotextile (SY):		67,467		**Riprap (CY):	44,978			Excavation (CY):	74,31
Material Costs:		Geotextile (SY):			***Riprap	(CY):		\$ 32.08	Excavation (	CY):	\$ -
Labor Cost:				\$ 0.26				***			\$ 2.40
Equipment Cost:				\$ -				***			\$ 1.39
Means Reference		33 32 1916 1500		3	1 37 1310 01	.00			31 23 1642 031	0	
Totals:		Geotextile (\$):		\$ 80,960.40		Riprap (\$):		\$ 1,442,894.24	Excavation (	CY):	\$ 281,639.11
Hours:		Geotextile (Hrs):		215.9		Riprap (Hrs	).	5 803 6	Excavation (	Hre).	1,857.73
Hours.		SY/HR	312.5	213.9		CY/HR	7.750	3,803.0	CY/HR	40.00	1,037.70
	φ	QIE.	T-4-1 C 4								
ACB	<b>\$ per Unit</b> <b>\$</b> 14.50	SF 96460	<b>Total Cost</b> \$ 1,398,670.00								
ACD	φ 14.30	90400	φ 1,396,070.00								
Total Post-Mining (		onstruction hours	s:	7,877.29	1						
Total Post-Mining (				\$ 3,204,163.75							
** Quantity of Geot *** Rip-Rap Purcha											

Task description:		Tenmile TSF, Place geogrid on wet cover area, 113.5 acres						
Site: Climax Mine		Pe	Permit Action: March 2019		Permit/Jol	o#: <u>M1977493</u>		
<u>P</u> ]		IDENTIFIC F01 3/14/2019 JLE	CATION State: County:	Colorado Summit		Abbreviation: Filename:	None NA	

Agency or organization name: DRMS

Area (acres)	Area (yd^2)	Unit	Cost (\$/yd^2)	Total Cost
		4		\$
113.5	549340	Ş	4.75	2,609,365.00

## TRUCK/LOADER TEAM WORK

Task description:	Tenmile	e TSF, Load and	Haul Subsoil fo	or Wet Cover Ar	ea	
Site: Climax Mine		Permit Act	ion: March 20	19	Permit/Job#:	M1977493
PROJECT IDENT	<b>IFICATION</b>					
Task #: F02		State: Colora	ado	Abł	previation: No	one
Date: 3/14/2	019 0	County: Summ			Filename: NA	A
User: JLE						
Agency or o	rganization nam	ne: DRMS				
HOURLY EQUIP	MENT COST	-		Shift ba	sis: <u>1 per day</u>	
		]	Equipment Descr	ription		
Tri	ick Loader Tear			<u> </u>		
			Г 950Н			
Suppor	t Equipment -Lo		D6T XL			
Dood Mai	-Du ntenance –Moto	mp Area: NA	Г 12М			
Koau Mai			ter Tanker, 5,000	Gal		
	· · · ·	ter fruck. Wu	er Tuliker, 5,000	Gui.		
Cost Breakdown:	Truck/Loa	der Team	Support	Equipment	Mainten	ance Equipment
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	100	NA	100	100
Ownership cost/hour:	\$66.13	\$26.14	\$52.66	NA	\$30.73	\$25.30
Operating cost/hour:	\$55.75	\$30.84	\$46.34	NA	\$30.60	\$36.60
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$0.00	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$0.00	NA	\$0.00	\$0.00
Operator cost/hour:	\$31.17	\$40.90	\$41.52	NA	\$28.69	\$21.23
Unit Subtotals:	\$153.05	\$97.89	\$140.52	NA	\$90.02	\$83.13
Number of Units:	5	1	1	0	1	1
Group Subtotals:	Work:	\$863.14	Support:	\$140.52	Maint:	\$173.15
Total work team cost/		1				
Initial volume:	457,783	CCY	Swell	factor: 1.000		
Loose volume:	457,78			1.000		
	ce of estimated		of cover over 113	5 acres		
	f estimated swel		Handbook			
	Material Purcha					
		tal Cost: \$0.00				

# **HOURLY PRODUCTION**

Truck Capacity:					
Truck Payload (weight) Basis	<u>s:</u>				
Material weight:	2,650	Pounds/			
Description:	<b>1</b>	k - 25% Rock, 75%	, Earth		
Rated Payload:	87,000	Pounds			
Payload Capacity:	32.83	LCY			
Truck Bed (volume) Basis:					
Struck Volume:	24.20 LC	CY			
Heaped Volume:	31.40 LC				
Average Volume:	27.80 LC				
Adjusted Volume:	31.40 LC	CY			
Einel /	Taualt Valuana Dag	ad on Number of I	aadar Daaaaa	21 (1	LCV
	TTUCK VOlume Das	ed on Number of L	Uauer rasses.	31.61	LCY
Loading Tool Capacity			Buck	et Size Class: N	Δ
Rated Capacity:	4.300	LCY (heaped)	Duck	<u> </u>	**
Bucket Fill Factor:	1.050	Other - moist loan	m (100-	110%) 1.050	
Adjusted Capacity:	4.515	LCY		,	
ob Condition Corrections:	<u>.                                    </u>	Site	Altitude (ft.):	<u>11000</u> feet	
	Truck	Loader	Source		
Altitude Adj:	0.600	1.000	(CAT HB	·	
Job Efficiency:	0.830	0.830	(CAT HB	5)	
Net Correction:	0.498	0.830			
Loading Tool Cycle Time:	Nur	nber of Loading To	ol Passes Requ	ired to Fill	7 passes
Excavators and Front Shove		C	1	Truck:	7 passes
Machine Cycle Time vs Selected Value v	s. Job Condition R within this Basic R				
Beleeted value v					
Track Loaders –					
	Material Descripti				
Cycle Time Elements (min.):	Material Descripti	on:			
Track Loaders – Cycle Time Elements (min.): Load: <u>NA</u>	Material Descripti			Dump:0.100	)
Cycle Time Elements (min.): Load: <u>NA</u>	Material Descripti	on:	 Cycle Time (lo	ad dump	minutes
Cycle Time Elements (min.): Load: <u>NA</u>	Material Descripti	on:	•	ad dump	500 minutes
Cycle Time Elements (min.): Load: <u>NA</u> Wheel and Tracl Cycle Time Factors	Material Descripti  k Loaders - Unadju	on: euver:NA 1sted Basic Loader (	•	pad, dump, 0. naneuver): 0. Factor (min.)	.500 minutes
Cycle Time Elements (min.): Load: <u>NA</u> Wheel and Tracl <u>Cycle Time Factors</u> Material:	Material Descripti  k Loaders - Unadju  Mixed material	on:NA euver:NA usted Basic Loader ( 0.02	•	pad, dump, naneuver):0. Factor (min.) 0.020	500 minutes Source (Cat HB)
Cycle Time Elements (min.): Load: <u>NA</u> Wheel and Tracl <u>Cycle Time Factors</u> <u>Material:</u> Stockpile:	Material Descripti Man k Loaders - Unadju Mixed material Dumped by true	on:NA euver:NA usted Basic Loader ( 0.02 ck 0.02	n	pad, dump, 0. naneuver): 0. Factor (min.)	.500 minutes
Eycle Time Elements (min.): Load: <u>NA</u> Wheel and Tracl <u>Cycle Time Factors</u> Material:	Material Descripti	on:NA euver:NA usted Basic Loader ( 0.02	n	pad, dump, naneuver):0. Factor (min.) 0.020	500 minutes Source (Cat HB)
Cycle Time Elements (min.): Load: <u>NA</u> Wheel and Tracl <u>Cycle Time Factors</u> <u>Material:</u> <u>Stockpile:</u> Truck Ownership:	Material Descripti Man k Loaders - Unadju Mixed material Dumped by true Common owner 0.04	on: euver: NA isted Basic Loader ( 0.02 ck 0.02 rship of trucks and I	n	pad, dump, 0. naneuver): 0. Factor (min.) 0.020 0.020 -0.040	Source (Cat HB) (Cat HB) (Cat HB)
Cycle Time Elements (min.): Load: <u>NA</u> Wheel and Tracl <u>Cycle Time Factors</u> <u>Material:</u> Stockpile: Truck Ownership: Operation:	Material Descripti Man k Loaders - Unadju Mixed material Dumped by true Common owne 0.04 Constant operat	on: euver: NA isted Basic Loader ( 0.02 ck 0.02 rship of trucks and I ion -0.04	n	pad, dump, 0. naneuver): 0. Factor (min.) 0.020 0.020 -0.040 -0.040	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)
Cycle Time Elements (min.): Load: <u>NA</u> Wheel and Tracl <u>Cycle Time Factors</u> <u>Material:</u> <u>Stockpile:</u> Truck Ownership:	Material Descripti Man k Loaders - Unadju Mixed material Dumped by true Common owner 0.04	on:NA euver:NA usted Basic Loader ( 0.02 ck 0.02 rship of trucks and 1 ion -0.04 0.00	n loaders -	pad, dump, naneuver):     0.       Factor (min.)     0.020       0.020     0.020       -0.040     0.000	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)
Cycle Time Elements (min.): Load: <u>NA</u> Wheel and Tracl <u>Cycle Time Factors</u> <u>Material:</u> Stockpile: Truck Ownership: Operation:	Material Descripti Man k Loaders - Unadju Mixed material Dumped by true Common owne 0.04 Constant operat	on: euver: NA isted Basic Loader ( 0.02 ck 0.02 rship of trucks and I ion -0.04	n loaders - Adjustment:	pad, dump, 0. naneuver): 0. Factor (min.) 0.020 0.020 -0.040 -0.040	Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)

#### Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	1.000	Minutes
Truck Load Time:	2.860	Minutes	Adjusted for site altitude:	2.860	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.667	Minutes

maintained 3.0

Truck Travel (Haul & Return) Time: Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	7656.00	8.00	3.00	11.00	857	9.027
2	4593.60	-5.00	3.00	-2.00	3005	1.576

Return Route:

Haul Time: 10.603 minutes

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	4593.60	5.00	3.00	8.00	2155	2.278
2	7656.00	-8.00	3.00	-5.00	3706	2.130

Return Time:	4.408	minutes
Total Truck Cycle Time:	20.538	minutes

Loading Tool unit Production Truck Unit Production	491.27	LCY/Hour	Adjusted for job e	fficiency:	407.75	_ LCY/Hour
	92.33	LCY/Hour	Adjusted for job et	fficiency:	76.64	LCY/Hour
Optimal No. of Trucks:	5	Truck(s)	Selected Number o	f Trucks:	5	Truck(s)
		Adjusted single true	ly truck team production: k/loader team production: k/loader team production:	383.18 383.18 <b>383.18</b>	LCY/F LCY/F LCY/F	Iour

Fleet size:	1	Team(s)	Total job time:	1,194.69	Hours
Unit cost:	\$3.071	/LCY	Total job cost:	\$1,405,924	

Climax Mine, M-1977-493

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# TRUCK/LOADER TEAM WORK

Task description: Site: <u>Climax Mine</u>	Tenmile	Tenmile TSF, Load and Haul Topsoil for Wet Cover Area         Permit Action:       March 2019       Permit/Job#:       M197749						M1977493
PROJECT IDENT	<b>TIFICATION</b>							
Task #:F02ADate: $3/14/2$ User:JLE	019 0		Colora Summ			Filename:	Nor NA	ne
Agency or o	organization nan	ne: DRM	IS					
HOURLY EQUIP	MENT COST	-			Shift ba	sis: <u>1 per da</u>	y	
				Equipment Descri	iption			
	uck Loader Tear	-Loader:		Г 950Н				
Suppor	t Equipment -L	oad Area: mp Area:	Cat NA	D6T XL				
Road Mai	ntenance – Moto			Г 12М				
	-Wat	ter Truck:	Wat	ter Tanker, 5,000	Gal.			
Cost Breakdown:	Truck/Loa	der Team		Support	Equipment	Mai	ntena	nce Equipment
	Truck	Loader		Load Area	Dump Area	Motor Grader		Water Truck
%Utilization-machine:	100		100	100	NA	1	100	100
Ownership cost/hour:	\$66.13	\$2	6.14	\$52.66	NA	\$30	.73	\$25.30
Operating cost/hour:	\$55.75	\$3	0.84	\$46.34	NA	\$30		\$36.60
%Utilization-riper:	NA		0	NA	NA	1	NA	NA
Ripper own. cost/hour:	NA	\$	0.00	\$0.00	NA	\$0	.00	\$0.00
Ripper op. cost/hour:	NA	\$	0.00	\$0.00	NA	\$0	.00	\$0.00
Operator cost/hour:	\$31.17	\$4	0.90	\$41.52	NA	\$28	.69	\$21.23
Unit Subtotals:	\$153.05	\$9	7.89	\$140.52	NA	\$90	.02	\$83.13
Number of Units:	5		1	1	0		1	1
Group Subtotals:	Work:	\$863.14		Support:	\$140.52	Ma	int:	\$173.15
Total work team cost/		31						

Initial volume:	91,557	CCY	Swell factor:	1.000	
Loose volume:	91,557	LCY			
Sourc	e of estimated volume:	6" of cover	over 113.5 acres		
Source of	estimated swell factor:	Cat Handb	ook		
Ν	Aaterial Purchase Cost:	\$0.00			
	Total Cost:	\$0.00			

# **HOURLY PRODUCTION**

Truck Capacity:							
Truck Payload (weight) Basi			D 1/I				
Material weight:	1,600		Pounds/L	CY			
Description:	Top Soil		D 1.				
Rated Payload:	87,000		Pounds				
Payload Capacity:	54.38		LCY				
Truck Bed (volume) Basis:							
Struck Volume:	24.20	LCY					
Heaped Volume:	31.40	LCY					
Average Volume:	27.80	LCY					
Adjusted Volume:	31.40	LCY					
Aujusted Volume.	51.40	LCI					
Final	Truck Volume	Based on Nu	mber of Loa	ader Passes:	31.61	LCY	
Loading Tool Capacity							
Poted Conseitur	4 200	I CV (h	(hannad)	Buck	et Size Class:	NA	
Rated Capacity: Bucket Fill Factor:	4.300	LCY (h	moist loam	(100	110%) 1.050		
Adjusted Capacity:	4.515	LCY	moist ioam	(100-	110%)1.030		
Aujusteu Capacity.	4.515						
Job Condition Corrections	<u>:</u>		Site A	Altitude (ft.):	<u>11000</u> feet		
	Truck	Load		Source			
Altitude Adj:	0.600	1.00		(CAT HB			
Job Efficiency:	0.830	0.83	0	(CAT HB	5)		
Net Correction:	0.498	0.83	0				
Loading Tool Cycle Time:	1	Number of Lo	oading Tool	Passes Requ	ired to Fill	7	passes
Excavators and Front Shove	<u>ls:</u>				Truck:	1	
Machine Cycle Time v Selected Value			NA NA				
Track Loaders –			1171				
Cycle Time Elements (min.):							
Load: NA	Ν	Ianeuver:	NA		Dump: 0.1	00	
Wheel and Trac	k Loaders - Un	adjusted Basi	c Loader C	vcle Time (lo	ad dump		minutes
Wheel and The	R Louders en	agustea Dasi			naneuver):	0.500	linnutes
Cycle Time Factors					Factor (min.)	Source	
Material:	Mixed mater	rial 0.02			0.020	(Cat HI	3)
Stockpile:	Dumped by				0.020	(Cat HI	3)
Truck Ownership:	Common ov 0.04	vnership of tr	ucks and lo	aders -	-0.040	(Cat HI	3)
Operation:		eration -0.04			-0.040	(Cat HI	3)
Dump Target:	Nominal tar				0.040	(Cat HI	
2 unp 1uigou			cle Time A	diustment:	-0.040	minute	· · · · · · · · · · · · · · · · · · ·
			d Loader C		0.460	minute	
			Load Time		2.860	minute	

#### Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	1.000	Minutes
Truck Load Time:	2.860	Minutes	Adjusted for site altitude:	2.860	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.667	Minutes

maintained 3.0

Truck Travel (Haul & Return) Time: Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	7656.00	8.00	3.00	11.00	857	9.027
2	4593.60	-5.00	3.00	-2.00	3005	1.576

Haul Time: 10.6

603	minutes

Return Rou	ite:					
Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	4593.60	5.00	3.00	8.00	2155	2.278
2	7656.00	-8.00	3.00	-5.00	3706	2.130

Return Time:	4.408	minutes
Total Truck Cycle Time:	20.538	minutes

Loading Tool unit						
Production	491.27	LCY/Hour	Adjusted for job e	fficiency:	407.75	LCY/Hour
Truck Unit Production						
	92.33	LCY/Hour	Adjusted for job e	fficiency:	76.64	LCY/Hour
Optimal No. of Trucks:	5	Truck(s)	Selected Number o	f Trucks:	5	Truck(s)
		Adjusted hour	rly truck team production:	383.18	LCY/H	Iour
	A	Adjusted single truc	k/loader team production:	383.18	LCY/H	Iour
	Ad	usted multiple truc	k/loader team production:	383.18	LCY/H	Iour

Fleet size:	1	Team(s)	Total job time:	238.94	Hours
Unit cost:	\$3.071	/LCY	Total job cost:	\$281,186	

Climax Mine	Pe	rmit Action:	March 2019	Permit/Jo	b#: <u>M1977493</u>
ROJECT IDENTIFI	<b>CATION</b>				
Task #: <u>F03</u>	State:	Colorado		Abbreviation:	None
Date: $3/14/2019$	County:	Summit		Filename:	NA
User: JLE Agency or organ	ization name: DE	RMS			
Agency of organ	iization name. <u>Dr</u>				
HOURLY EQUIPME					
	D8T - 8SU		-		
Horsepower: 310					
	ni-Universal		-		
	er day		-		
Data Source: (CR					
Cost Breakdown:			-		
			Utilization %		
Ownership Cost/Hour:		\$93.62	NA		
Operating Cost/Hour:		\$73.35	100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.52	NA		
Initial Volume:       457,         Swell factor:       1.00         Loose volume:       457,	783				
Source of estimated volu Source of estimated swell factor:		113.5 acres book			
HOURLY PRODUCT	ION				
Average push distance: Unadjusted hourly production:	250 feet 377.8 LCY/	'n			
Materials consistency description:	Looses	stockpile 1.2			
Average push gradient:	0 %				
Average site altitude:	11,000 feet				
Material weight:	2,650 lbs/LCY				
Weight description:	Decomposed rock	- 25% Rock.	75% Earth		
0 1	1	,			

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.100	(50% SL)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Adjusted unit production:	215.57 LCY/hr
Adjusted fleet production:	862.28 LCY/hr

Fleet size:	4 Dozer(s)
Unit cost:	\$0.967/LCY

Total job time:	530.90 Hours
Total job cost:	\$442,756

Climax Mine	Climax Mine Per		March 2019	Permit/Jo	b#: <u>M1977493</u>
ROJECT IDENTIFITask #:F03ADate:3/15/2019User:JLE	CATION State: County:	Colorado Summit		Abbreviation: Filename:	None NA
Agency or organ	ization name: DI	RMS			
IOURLY EQUIPME	NT COST				
Basic Machine: Cat	D8T - 8SU				
Horsepower: 310					
• 1	ni-Universal				
Attachment: NA					
Shift Basis: <u>1 p</u> Data Source: (CF	er day				
Cost Breakdown:					
Jost DICARUOWII.			Utilization %		
Ownership Cost/Hour:		\$93.62	NA		
Operating Cost/Hour:		\$73.35	100		
Ripper own.		\$0.00	NA		
Cost/Hour:					
Ripper op. Cost/Hour: Operator Cost/Hour:		\$0.00 \$41.52	0 NA		
Total unit Cost/Hour:	\$208.49				
Total Fleet Cost/Hour:	\$833.97				
MATERIAL QUANT	ITIES				
Initial Volume: 91,5	57				
Swell factor: 1.00					
	57 LCY				
Source of estimated volu	ime: <u>30" over</u>	113.5 acres			
Source of estimated swe	ll Cat Hand	lbook			
factor:					
HOURLY PRODUCT	ION				
Average push distance:	250 feet	. /4			
	377.8 LCY	/h.m.			
Unadjusted hourly	577.0 EC I	/ 111			
Unadjusted hourly production:		/111			
production:					
production: Materials consistency		stockpile 1.2			
production:					
production: Materials consistency description:	Loose				
production: Materials consistency description: Average push					
production: Materials consistency description: Average push gradient:	0 %				
production: Materials consistency description: Average push	Loose				
production: Materials consistency description: Average push gradient:	0 %				
production: Materials consistency description: Average push gradient: Average site altitude:	0 % 11,000 feet				

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.100	(50% SL)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Adjusted unit production:	357.13 LCY/hr
Adjusted fleet production:	1428.52 LCY/hr

Fleet size:	4 Dozer(s)
Unit cost:	\$0.584/LCY

Total job time:	64.09 Hours
Total job cost:	\$53,451

Climax Mine, M-1977-493

March 2019, DRMS Cost Estimate

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# TRUCK/LOADER TEAM WORK

ite: Climax Mine		Permit Action: March 2019 Permit/Job#: M				M1977493
PROJECT IDEN	<b>TIFICATION</b>					
Task #:F04			orado		previation: No	
Date: 3/14/2 User: JLE	2019 0	County: Sum	mit		Filename: NA	A
Agency or	organization nan	ne: DRMS				
HOURLY EQUI	PMENT COST	-		Shift ba	sis: <u>1 per day</u>	
			Equipment Descr	iption		
T	ruck Loader Tea		at 740			
Suppo	ort Equipment -L		AT 950H at D6T XL			
Suppo	1 1	mp Area: N				
Road Ma	aintenance – Moto	or Grader: CA	AT 12M			
	-Wat	ter Truck: W	ator Tapkar 5 000	Gal		
			ater Tanker, 5,000	Gal.		
Cost Breakdown:	Truck/Loa	Ľ			Mainten	ance Equipment
Cost Breakdown:	Truck/Loa Truck	Ľ		Equipment Dump Area	Mainten Motor Grader	ance Equipment Water Truck
		der Team	Support Load Area	Equipment	Motor	
Utilization-machine:	Truck	der Team Loader	Support Load Area	Equipment Dump Area	Motor Grader	Water Truck
Utilization-machine:	Truck 100	der Team Loader 100	Support Load Area 100 \$52.66	Equipment Dump Area NA	Motor Grader 100	Water Truck
Utilization-machine: Ownership cost/hour: Operating cost/hour: %Utilization-riper:	Truck 100 \$66.13	der Team Loader 100 \$26.14	Support           Load Area           100           \$52.66           \$46.34	Equipment Dump Area NA NA	Motor Grader 100 \$30.73	Water Truck 100 \$25.30 \$36.60
Utilization-machine: Ownership cost/hour: Operating cost/hour:	Truck 100 \$66.13 \$55.75	der Team Loader 100 \$26.14 \$30.84	Support           Load Area           100           \$52.66           \$46.34           NA	Equipment Dump Area NA NA NA	Motor Grader 100 \$30.73 \$30.60	Water Truck 100 \$25.30
Utilization-machine: Ownership cost/hour: Operating cost/hour: %Utilization-riper: Ripper own.	Truck 100 \$66.13 \$55.75 NA	der Team Loader 100 \$26.14 \$30.84 0	Support           Load Area           100           \$52.66           \$46.34           NA           \$0.00	Equipment Dump Area NA NA NA NA	Motor Grader 100 \$30.73 \$30.60 NA	Water Truck 100 \$25.30 \$36.60 NA
Utilization-machine: Dwnership cost/hour: Operating cost/hour: %Utilization-riper: Ripper own. cost/hour:	Truck 100 \$66.13 \$55.75 NA NA	der Team Loader 100 \$26.14 \$30.84 0 \$0.00	Support           Load Area           100           \$52.66           \$46.34           NA           \$0.00           \$0.00	Equipment Dump Area NA NA NA NA	Motor Grader 100 \$30.73 \$30.60 NA \$0.00	Water Truck 100 \$25.30 \$36.60 NA \$0.00
Utilization-machine: Ownership cost/hour: Operating cost/hour: %Utilization-riper: Ripper own. cost/hour: Ripper op. cost/hour:	Truck 100 \$66.13 \$55.75 NA NA NA	der Team Loader 100 \$26.14 \$30.84 0 \$0.00 \$0.00	Support           Load Area           100           \$52.66           \$46.34           NA           \$0.00           \$0.00           \$41.52	Equipment Dump Area NA NA NA NA NA	Motor Grader 100 \$30.73 \$30.60 NA \$0.00 \$0.00	Water Truck 100 \$25.30 \$36.60 NA \$0.00 \$0.00
Utilization-machine: Ownership cost/hour: Operating cost/hour: %Utilization-riper: Ripper own. cost/hour: Ripper op. cost/hour: Operator cost/hour:	Truck 100 \$66.13 \$55.75 NA NA NA \$31.17	der Team Loader 100 \$26.14 \$30.84 0 \$0.00 \$0.00 \$0.00 \$40.90	Support           Load Area           100           \$52.66           \$46.34           NA           \$0.00           \$0.00           \$41.52           \$140.52	Equipment Dump Area NA NA NA NA NA NA	Motor Grader 100 \$30.73 \$30.60 NA \$0.00 \$0.00 \$28.69	Water Truck 100 \$25.30 \$36.60 NA \$0.00 \$0.00 \$21.23

Initial volume:	274,670	CCY	Swell factor:	1.000	
Loose volume:	274,670	LCY			
Source	e of estimated volume:	6" over 340.5 a	icres		
Source of	estimated swell factor:	Cat Handbook			
Ν	Material Purchase Cost:	\$0.00			
	Total Cost:	\$0.00			

# **HOURLY PRODUCTION**

HOURLY PRODUCT	<u>1011</u>				
Truck Capacity:					
Truck Payload (weight) Basi	<u>s:</u>				
Material weight:	2,650	Pounds			
Description:	Decomposed	rock - 25% Rock, 75%	5 Earth		
Rated Payload:	87,000	Pounds			
Payload Capacity:	32.83	LCY			
Truck Bed (volume) Basis:					
Struck Volume:	24.20	LCY			
Heaped Volume:	31.40	LCY			
Average Volume:	27.80	LCY			
Adjusted Volume:	31.40	LCY			
Final	Truck Volume	Based on Number of L	oader Passes	31.61	LCY
	Truck Volume	Dased on Number of L	odder i asses.	51.01	
Loading Tool Capacity					
			Buck	et Size Class: N	A
Rated Capacity:	4.300	LCY (heaped)			
Bucket Fill Factor:	1.050	Other - moist loa	m (100-	110%) 1.050	
Adjusted Capacity:	4.515	LCY			
<b>Job Condition Corrections</b>	<u>:</u>	Site	Altitude (ft.):	<u>11000</u> feet	
	Truck	Loader	Source		
Altitude Adj:	0.600	1.000	(CAT HB		
Job Efficiency:	0.830	0.830	(CAT HB		
JOU LINCICICLY.	0.050	0.030	(CAT III)	)	
Net Correction:	0.498	0.830			
			l		
Loading Tool Cycle Time:	]	Number of Loading To	ol Passes Requ	ired to Fill	7 passes
Evenuetors and Event Shows	1	-	-	Truck:	7 passes
Excavators and Front Shove	<u> 18:</u>				
Machine Cycle Time v					
Selected Value	within this Basi	c Rating: NA			
Track Loaders –	Material Desci	ription:			
Cycle Time Elements (min.)		·			
ycle Thile Elements (min.)	•				
Load: NA	Ν	Ianeuver: NA		Dump: 0.100	
Wheel and Trac	k Loaders - Un	adjusted Basic Loader	Cycle Time (lo	ad, dump,	500 minutes
		-	n	naneuver):	300
Cycle Time Factors	I			Factor (min.)	Source
Material:	Mixed mate	ria1 0 02		0.020	(Cat HB)
Stockpile: Truck Ownership:	Dumped by	vnership of trucks and	loaders	0.020	(Cat HB)
Truck Ownership:	0.04	vnersnip of trucks and	idadels -	-0.040	(Cat HB)
Operation:		eration -0.04		-0.040	(Cat HB)
Dump Target:	Nominal tar			0.000	(Cat HB)
Dump raiget.	i toninai tai	Net Cycle Time	A diustment.	-0.040	minutes
			Aujusuillellit.	-0.040	minutes
					minutes
		Adjusted Loader Net Load Tim	Cycle Time:	0.460 2.860	minutes minutes

#### Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	1.000	Minutes
Truck Load Time:	2.860	Minutes	Adjusted for site altitude:	2.860	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.667	Minutes

Truck Travel (Haul & Return) Time: maintained 3.0

Truck Travel (Haul & Return) Time: Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	7656.00	8.00	3.00	11.00	857	9.027
2	2745.60	-5.00	3.00	-2.00	3005	0.978

Return Route:

Haul Time: 10.005 minutes

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2745.60	5.00	3.00	8.00	2155	1.421
2	7656.00	-8.00	3.00	-5.00	3706	2.130

Return Time:	3.551	minutes
Total Truck Cycle Time:	19.083	minutes

Loading Tool unit Production Truck Unit Production	491.27	LCY/Hour	Adjusted for job e	fficiency:	407.75	_ LCY/Hour
-	99.37	LCY/Hour	Adjusted for job et	fficiency:	82.48	LCY/Hour
Optimal No. of Trucks:	5	Truck(s)	Selected Number o	f Trucks:	5	Truck(s)
		Adjusted single truck	y truck team production: /loader team production: /loader team production:	412.40 407.75 <b>407.75</b>	LCY/H LCY/H LCY/H	Iour
JOB TIME AND	O COST					

Fleet size:	1	Team(s)	Total job time:	673.62	Hours
Unit cost:	\$2.886	/LCY	Total job cost:	\$792,720	

Climax Mine, M-1977-493

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# TRUCK/LOADER TEAM WORK

	Permit A	ction: March 201	9	Permit/Job#:	M1977493
<b>FICATION</b>					
			Abb		lone
19 C	County: Sum	mit		Filename: N	IA
ganization nam	e: DRMS				
			~		
<u>AENT COST</u>			Shift ba	sis: <u>1 per day</u>	
			iption		
ck Loader Tear					
Equipment -L					
-Wat	er Truck: W	ater Tanker, 5,000	Gal.		
Truck/Loa	der Team	Support	Fauinment	Mainte	nance Equipment
				munite	
Truck	Loader	Load Area	Dump Area	Motor	Water Truck
Truck	Loader	Load Area	Dump Area	Grader	Water Truck
Truck 100	Loader 100	Load Area 100	Dump Area NA	Grader 100	Water Truck
Truck 100 \$66.13	Loader 100 \$26.14	Load Area 100 \$52.66	Dump Area NA NA	Grader 100 \$30.73	Water Truck           0         100           3         \$25.30
Truck 100 \$66.13 \$55.75	Loader 100 \$26.14 \$30.84	Load Area 100 \$52.66 \$46.34	Dump Area NA NA NA	Grader 100 \$30.73 \$30.60	Water Truck           0         100           3         \$25.30           0         \$36.60
Truck 100 \$66.13	Loader 100 \$26.14	Load Area 100 \$52.66 \$46.34	Dump Area NA NA	Grader 100 \$30.73	Water Truck           0         100           3         \$25.30           0         \$36.60
Truck 100 \$66.13 \$55.75	Loader 100 \$26.14 \$30.84	Load Area 100 \$52.66 \$46.34 NA	Dump Area NA NA NA	Grader 100 \$30.73 \$30.60	Water Truck           0         100           3         \$25.30           0         \$36.60           A         NA
Truck 100 \$66.13 \$55.75 NA	Loader 100 \$26.14 \$30.84 0	Load Area 100 \$52.66 \$46.34 NA \$0.00	Dump Area NA NA NA	Grader 100 \$30.73 \$30.60 NA	Water Truck           0         100           3         \$25.30           0         \$36.60           A         NA           0         \$0.00
Truck 100 \$66.13 \$55.75 NA NA	Loader 100 \$26.14 \$30.84 0 \$0.00	Load Area 100 \$52.66 \$46.34 NA \$0.00 \$0.00	Dump Area NA NA NA NA	Grader 100 \$30.73 \$30.60 NA \$0.00	Water Truck           0         100           3         \$25.30           0         \$36.60           x         NA           0         \$0.00           0         \$0.00
Truck 100 \$66.13 \$55.75 NA NA NA	Loader 100 \$26.14 \$30.84 00 \$0.00 \$0.00	Load Area 100 \$52.66 \$46.34 NA \$0.00 \$0.00 \$0.00 \$41.52	Dump Area NA NA NA NA NA	Grader 100 \$30.73 \$30.60 NA \$0.00 \$0.00	Water Truck           0         100           3         \$25.30           0         \$36.60           A         NA           0         \$0.00           0         \$0.00           0         \$21.23
Truck 100 \$66.13 \$55.75 NA NA NA \$31.17	Loader 100 \$26.14 \$30.84 00 \$0.00 \$0.00 \$0.00 \$40.90	Load Area 100 \$52.66 \$46.34 NA \$0.00 \$0.00 \$0.00 \$41.52 \$140.52	Dump Area NA NA NA NA NA NA NA NA	Grader 100 \$30.73 \$30.60 NA \$0.00 \$0.00 \$28.69	Water Truck           0         100           3         \$25.30           0         \$36.60           x         NA           0         \$0.00           x         \$0.00           x         \$0.00           x         \$100           x         \$100
	19 C ganization nam IENT COST Ck Loader Tear Equipment -Lo -Du tenance –Moto -Wat	FICATION         State:       Color         19       County:       Sum         ganization name:       DRMS         IENT COST         Ck Loader Team -Truck:       Ca         -Loader:       Ca         -Loader:       Ca         -Dump Area:       Na         -Water Truck:       Water Truck:	FICATION         State:       Colorado         19       County:       Summit         ganization name:       DRMS         Equipment Descr         ganization name:       DRMS         IENT COST         Equipment Descr         ck Loader Team -Truck:       Cat 740         -Loader:       CAT 950H         Equipment -Load Area:       Cat D6T XL         -Dump Area:       NA         tenance –Motor Grader:       CAT 12M         -Water Truck:       Water Tanker, 5,000	FICATION         State:       Colorado       Abb         19       County:       Summit         ganization name:       DRMS         Genization name:       DRMS         IENT COST         Shift ba         Equipment Description         ck Loader Team -Truck:       Cat 740         -Loader:       CAT 950H         Equipment -Load Area:       Cat D6T XL         -Dump Area:         NA       tenance –Motor Grader:         -Water Truck:       Water Tanker, 5,000 Gal.	FICATION         Image: State: Colorado       Abbreviation: N         19       County: Summit       Filename: N         ganization name: DRMS       Shift basis: 1 per day         IENT COST       Shift basis: 1 per day         Equipment Description       Equipment Description         ck Loader Team -Truck: Cat 740       Cat 740         -Loader: CAT 950H       Equipment -Load Area: Cat D6T XL         -Dump Area: NA       NA         tenance -Motor Grader: CAT 12M       Water Tanker, 5,000 Gal.

MATERIAL QUANTITIES

Initial volume:	274,670	CCY	Swell factor:	1.000	
Loose volume:	274,670	LCY			
Source of	e of estimated volume: estimated swell factor: Aaterial Purchase Cost:	Cat Handbe \$0.00			
	Total Cost:	\$0.00			

# **HOURLY PRODUCTION**

Truck Capacity:							
Truck Payload (weight) Basis			<b>D</b> 1.7	<b>CT</b> 1			
Material weight:	1,600		Pounds/I	ĹΥ			
Description:	Top Soil		D 1.				
Rated Payload:	87,000		Pounds				
Payload Capacity:	54.38		LCY				
Truck Bed (volume) Basis:							
Struck Volume:	24.20	LCY					
Heaped Volume:	31.40	LCY					
Average Volume:	27.80	LCY					
Adjusted Volume:	31.40	LCY					
Aujusted Volume.	51.40	LCI					
Final	Fruck Volume	Based on Nu	umber of Lo	ader Passes:	31.61	LCY	
Loading Tool Capacity							
Rated Capacity:	4.300		heaped)	Buck	tet Size Class:	NA	
Bucket Fill Factor:	1.050		- moist loan	<u>, (100</u>	110%) 1.050		-
Adjusted Capacity:	4.515	LCY	- 11015t 10a11	1 (100-	110%) 1.050		-
Aujusted Capacity.	4.515						
Job Condition Corrections:	<u> </u>		Site	Altitude (ft.):	<u>11000</u> feet		
	Truck	Load		Source			
Altitude Adj:	0.600	1.00		(CAT HE			
Job Efficiency:	0.830	0.83	30	(CAT HE	8)		
Net Correction:	0.498	0.83	30				
Loading Tool Cycle Time:	1	Number of L	oading Too	l Passes Requ	ired to Fill	7	passes
Excavators and Front Shove	<u>ls:</u>				Truck:	1	
Machine Cycle Time v Selected Value v			NA NA				
Track Loaders –		<u> </u>	1 1/2 1				
Cycle Time Elements (min.):		·					
Load: NA	N	laneuver:	NA		Dump: 0.1	00	
Wheel and Track	k Loaders - Un	adjusted Bas	ic Loader C	•	oad, dump, naneuver):	0.500 min	utes
Cycle Time Factors					Factor (min.)	Source	
Material:	Mixed mater	rial 0.02			0.020	(Cat HB)	_
Stockpile:	Dumped by				0.020	(Cat HB)	_
Truck Ownership:	Common ov 0.04		rucks and lo	oaders -	-0.040	(Cat HB)	—
Operation:	Constant op	eration _0.04			-0.040	(Cat HB)	
Dump Target:	Nominal tar		r		0.000	(Cat HB)	
	r tonniar tal		ycle Time A	diustment [.]	-0.040	minutes	_
			ed Loader C		0.460	minutes	
				per Truck:	2.860	minutes	

#### Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	1.000	Minutes
Truck Load Time:	2.860	Minutes	Adjusted for site altitude:	2.860	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.667	Minutes

Truck Travel (Haul & Return) Time: maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Rout Seg #		Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
3eg #	(Ft)	Istance	Grade (%)	(%)	(%)	(fpm)	Time (min)	
1	7656.0	0	8.00	3.00	11.00	857	9.027	
2	2745.6	0	-5.00	3.00	-2.00	3005	0.978	
					Haul Time:	10.005	minute	S
Return Ro					<b>T</b> 1 <b>D</b>	X 7 1 ·.	T1	
Seg #		oistance	Grade (%)	Roll. Res	Total Res	Velocity	Travel Time	
	(Ft)			(%)	(%)	(fpm)	(min)	
1	2745.6	0	5.00	3.00	8.00	2155	1.421	
2	7656.0	0	-8.00	3.00	-5.00	3706	2.130	
				Total True	Return Time: ck Cycle Time:	-		
Loading Too Prod Fruck Unit Prod	uction	491.27	LCY/Hour		Adjusted for jo	b efficiency:	407.75	LCY/Hour
	_	99.37	LCY/Hour		Adjusted for jo	ob efficiency:	82.48	LCY/Hour
ptimal No. of T	rucks:	5	Truck(s)		Selected Numb	er of Trucks:	5	Truck(s)
			Adjusted Adjusted single		team productio			/Hour /Hour
		A	djusted multiple					/Hour
JOB TIM	1E AND	COST						
Fleet	size:	1	Team(s)	Т	otal job time:	673.6	<b>2</b> Ho	urs

Climax Mine	Permit	Action:	March 2019	Permit/Jo	b#: <u>M1977493</u>
ROJECT IDENTIFI	CATION				
Task #: F05	State: C	olorado		Abbreviation:	None
Date: 3/14/2019	County: Su	ımmit		Filename:	NA
User: JLE					
Agency or organ	ization name: DRMS				
OURLY EQUIPME	NT COST				
Basic Machine: Cat	D8T - 8SU				
Horsepower: 310					
	ni-Universal				
Attachment: NA					
	er day				
Data Source: (CR					
ost Breakdown:					
			Utilization %		
Ownership Cost/Hour:		\$93.62	NA		
Operating Cost/Hour:		\$73.35	100		
Ripper own.		\$0.00	NA	—	
Cost/Hour:					
Ripper op. Cost/Hour: Operator Cost/Hour:		\$0.00 \$41.52	0 NA		
Total unit Cost/Hour:	\$208.49				
Total Fleet Cost/Hour:	\$833.97				
IATERIAL QUANTI	TIES				
Initial Volume: 274,					
Swell factor: 1.00					
Loose volume: 274,	570 LCY				
Source of estimated volu					
Source of estimated swel	1 Cat Handboo	k			
factor:					
IOURLY PRODUCT	ION				
	250 feet				
Average push distance:					
Unadjusted hourly	377.8 LCY/hr				
production:					
Materials consistency	Loose stoc	knile 1.2			
	Loose stoc.	kpiie 1.2			
description:					
Average push	0 %				
gradient:	0 /0				
Average site altitude:	11,000 feet				
restage she unitude.					
Material weight:	2,650 lbs/LCY				
Weight description:	Decomposed rock - 2:	5% Rock	75% Earth		
,, eight debeliption.		, o noon,	, 5 / 6 Lan		

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.100	(50% SL)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Adjusted unit production:	215.57 LCY/hr
Adjusted fleet production:	862.28 LCY/hr

Fleet size:	4 Dozer(s)
Unit cost:	\$0.967/LCY

Total job time:	318.54 Hours
Total job cost:	\$265,654

Basic Machine:       Cat D         Horsepower:       310         Blade Type:       Semi-         Attachment:       NA         Shift Basis:       1 per         Data Source:       (CRG         ost Breakdown:       0         Ownership Cost/Hour:	State:       Colorado         County:       Summit         ation name:       DRMS <b>E COST</b> 8T - 8SU         Universal       441.52         \$208.49       \$33.97	Utilization % NA 100 NA 0 NA	Abbreviation: Filename:	None NA
OURLY EQUIPMENT         Basic Machine:       Cat D         Horsepower:       310         Blade Type:       Semi-         Attachment:       NA         Shift Basis:       1 per of         Data Source:       (CRG         Data Source:       (CRG         Ost Breakdown:       Ownership Cost/Hour:         Operating Cost/Hour:       Ripper own.         Cost/Hour:       Cost/Hour:         Ripper op. Cost/Hour:       Operator Cost/Hour:         Operator Cost/Hour:       State Cost/Hour:         Total unit Cost/Hour:       State Cost/Hour:         Initial Volume:       274,67         Swell factor:       1.000         Loose volume:       274,67         Source of estimated volum       Source of estimated swell factor:         OURLY PRODUCTIC       State	F COST         8T - 8SU         Universal         day         )         \$93.62         \$73.35         \$0.00         \$0.00         \$41.52         \$208.49         \$833.97	NA           100           NA           0		
Basic Machine:       Cat D         Horsepower:       310         Blade Type:       Semi-         Attachment:       NA         Shift Basis:       1 per         Data Source:       (CRG         Ownership Cost/Hour:	8T - 8SU Universal day ) \$93.62 \$73.35 \$0.00 \$0.00 \$0.00 \$41.52 \$208.49 \$833.97	NA           100           NA           0		
Horsepower:       310         Blade Type:       Semi-         Attachment:       NA         Shift Basis:       1 per         Data Source:       (CRG         Ownership Cost/Hour:	Universal day ) \$93.62 \$73.35 \$0.00 \$0.00 \$0.00 \$41.52 \$208.49 \$833.97	NA           100           NA           0		
Blade Type:       Semi-         Attachment:       NA         Shift Basis:       1 per         Data Source:       (CRG         Ownership Cost/Hour:	day ) \$93.62 \$73.35 \$0.00 \$0.00 \$41.52 \$208.49 <b>\$833.97</b>	NA           100           NA           0		
Attachment:       NA         Shift Basis:       1 per         Data Source:       (CRG         Ownership Cost/Hour:	day ) \$93.62 \$73.35 \$0.00 \$0.00 \$41.52 \$208.49 <b>\$833.97</b>	NA           100           NA           0		
Shift Basis:       1 per display         Data Source:       (CRG         Ost Breakdown:       0         Ownership Cost/Hour:       0         Operating Cost/Hour:       0         Ripper own.       Cost/Hour:         Cost/Hour:       0         Ripper own.       Cost/Hour:         Operator Cost/Hour:       0         Operator Cost/Hour:       0         Total unit Cost/Hour:       1000         Iotal Fleet Cost/Hour:       1000         Loose volume:       274,67         Source of estimated volum       Source of estimated swell         Cactor:       0         OURLY PRODUCTIC       0	) \$93.62 \$73.35 \$0.00 \$0.00 \$41.52 \$208.49 \$833.97	NA           100           NA           0		
Data Source: (CRG ost Breakdown: Ownership Cost/Hour: Operating Cost/Hour: Ripper own Cost/Hour: Ripper op. Cost/Hour: Operator Cost/Hour: Total unit Cost/Hour: Total Fleet Cost/Hour: EATERIAL QUANTIT Initial Volume:274,67 Swell factor: Loose volume:274,67 Source of estimated volum Source of estimated volum Source of estimated swell factor: OURLY PRODUCTIC	) \$93.62 \$73.35 \$0.00 \$0.00 \$41.52 \$208.49 \$833.97	NA           100           NA           0		
Dest Breakdown:         Ownership Cost/Hour:         Operating Cost/Hour:         Ripper own.         Cost/Hour:         Ripper op. Cost/Hour:         Operator Cost/Hour:         Operator Cost/Hour:         Operator Cost/Hour:         Fotal unit Cost/Hour:         Total unit Cost/Hour:         Swell Fleet Cost/Hour:         Initial Volume:         274,67         Swell factor:         Source of estimated volum         Source of estimated swell         Cactor:	\$93.62 \$73.35 \$0.00 \$0.00 \$41.52 \$208.49 \$833.97	NA           100           NA           0		
Ownership Cost/Hour:	\$73.35 \$0.00 \$0.00 \$41.52 \$208.49 \$833.97	NA           100           NA           0		
Operating Cost/Hour: Ripper own. Cost/Hour: Ripper op. Cost/Hour: Operator Cost/Hour: Total unit Cost/Hour: Total Fleet Cost/Hour: Cotal Fleet	\$73.35 \$0.00 \$0.00 \$41.52 \$208.49 \$833.97	NA           100           NA           0		
Operating Cost/Hour: Ripper own. Cost/Hour: Ripper op. Cost/Hour: Operator Cost/Hour: Total unit Cost/Hour: Total Fleet Cost/Hour: <b>EXTERIAL QUANTIT</b> Initial Volume: Loose volume: 274,67 Swell factor: Loose volume: 274,67 Source of estimated volum Source of estimated swell factor: COURLY PRODUCTIC	\$73.35 \$0.00 \$0.00 \$41.52 \$208.49 \$833.97	100 NA 0		
Ripper own. Cost/Hour: Ripper op. Cost/Hour: Operator Cost/Hour: Total unit Cost/Hour: Total Fleet Cost/Hour: Initial Volume: Swell factor: Loose volume: Source of estimated volum Source of estimated swell factor: OURLY PRODUCTIO	\$0.00 \$0.00 \$41.52 \$208.49 \$833.97	NA 0		
Cost/Hour: Ripper op. Cost/Hour: Operator Cost/Hour: Total unit Cost/Hour: Total Fleet Cost/Hour: <b>EXTERIAL QUANTIT</b> Initial Volume: Swell factor: Loose volume: 274,67 Source of estimated volum Source of estimated swell factor: <b>OURLY PRODUCTIC</b>	\$0.00 \$41.52 \$208.49 \$833.97	0		
Operator Cost/Hour: Total unit Cost/Hour: Total Fleet Cost/Hour: Initial Volume: Swell factor: Loose volume: 274,67 Source of estimated volum Source of estimated swell factor: OURLY PRODUCTIO	\$41.52 \$208.49 <b>\$833.97</b>			
Total unit Cost/Hour:       2         Total Fleet Cost/Hour:       2         IATERIAL QUANTIT       1.000         Initial Volume:       274,67         Swell factor:       1.000         Loose volume:       274,67         Source of estimated volum         Source of estimated swell         factor:         OURLY PRODUCTIC	\$208.49 \$ <b>833.97</b>	NA		
Total Fleet Cost/Hour:       State Cost/Hour:         Initial Volume:       274,67         Swell factor:       1.000         Loose volume:       274,67         Source of estimated volum         Source of estimated volum         Source of estimated swell         factor:         OURLY PRODUCTIO	\$833.97			
factor:	0			
IOURLY PRODUCTIO	e: 6" Over 340.5 acres			
factor: IOURLY PRODUCTIO	Cat Handbook			
	DN			
Average push distance: Unadjusted hourly production:	250 feet 377.8 LCY/hr			
Materials consistency description:	Loose stockpile 1.2			
gradient:	0 %			
Average site altitude:	11,000 feet			
Material weight:				
Weight description:	1,600 lbs/LCY			

Job Condition Correction Factor	Source	
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.100	(50% SL)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Adjusted unit production:	357.13 LCY/hr
Adjusted fleet production:	1428.52 LCY/hr

Fleet size:	4 Dozer(s)
Unit cost:	\$0.584/LCY

Total job time:	192.28 Hours
Total job cost:	\$160,353
## SAFEGUARDING UNDERGROUND OPENINGS

	scription:	Tenmile Tunnel, Bulkhead				
e: Climax	Mine	Permit Action:	March 2019	Pe	ermit/Job#: <u>M1</u>	.977493
PROJE(	CT IDENTIFI	<u>CATION</u>				
Teelr	G01	State: Colorado		Abbreviation:	None	
Task	001					
1 ask #:						
	3/14/2019	County: Summit		Filename:	NA	

### **UNIT COSTS**

Opening Description	Dimensions	Closure Method	Quantity	Unit	Unit Cost	Total Cost
Bulkhead closure cost	North and South Portal	USER PROVIDED ITEM	2.00	2	\$347,412.00	\$694,824.00

Job Hours: 0.00

Total Cost: \$694,824.00

### PUMPING WORK

	<u>1010</u>					
Task description:	Tenmile Tunnel; Dred	ge and Pump Sludge to	o <b>Tunnel</b>			
te: Climax Mine	Permit Ac	ction: March 2019	Permit/Job#:	Permit/Job#: M1977493		
PROJECT IDENTIF	ICATION					
Task #: G02	State: Color	rado	Abbreviation: N	one		
Date: $3/14/2019$			Filename: N			
User: JLE	County. Sum	IIIt				
· · · · · · · · · · · · · · · · · · ·						
Agency or orga						
HOURLY EQUIPME	<u>ENT COST</u>					
	Description		Quantity	_		
Make and Model: <u>Trash pump - 70MT, 6 in.</u>			2	_		
Attachment 1:	Suction hose - 6 in. diam		1	_		
Attachment 2:	6	, 25 ft.	388	_		
Labor Unit 1:	1		2	_		
Horsepower:	70					
	per day					
Weight:	0.80					
[×]	JS Tons)					
Cost Breakdown:						
	¢104.50	Utilization %				
Ownership Cost/ Operating Cost/		NA 100				
Operator Cost/		NA				
Total Unit Cost/		INA				
Total Fleet Cost	t/Hour: \$224.33					
PUMPING QUANTI	<u>TIES</u>					
Initial Pond Vo	lume: 38,519.00		Conversion factor:	201.9735		
Final Pond Vo		gallons				
Total Pond Inflow Su		0	Unit inflow rate in			
	Area: 3,210,319	Sq. ft.	gph/sq. ft.:	0.3516		
Total Pond Inflow Vo	olume					
per 1	Hour: 1,128,748.16	gallons				
Source	of estimated volume: AM	06 Cost Estimate				
PUMPING TIME						
May	ximum Pump Capacity:	80,000	gph/pump			
	stimated Suction Head:	0	feet			
Esti	mated Discharge Head:	305	feet			
	Total Head:	305	feet			
	CPB Pump Capacity:	71,700	gph/pump			
	Site Altitude:	11,000	feet			
		142.400	1			
	sted Pumping Capacity:	143,400	gph			
	djusted Pumping Time:	54.25	hours			
	during Initial Pumping: djusted Pumping Time:	<u>61,237,478</u> 481.29	gallons Hours			
	ude Adjustment Factor:	0.8800	(3% rule)			
			(3/0 1010)			
	ump Efficiency Factor:	0.9167	(55 min./hr.)			

<u> </u>			Total job time:	388.26	Hours
Unit cost:	\$0.001262	/Gallon	Total job cost:	\$87,098	

## SAFEGUARDING UNDERGROUND OPENINGS

Climax	Mine	Permit	Action: March 2	2019 I	Permit/Job#: <u>M1977493</u>
<u>PROJE(</u>	CT IDENTIFI	CATION			
Task #:	G03	State: Co	lorado	Abbreviation:	None
Date:	3/14/2019	County: Su	mmit	Filename:	NA

### **UNIT COSTS**

Opening Description	Dimensions	Closure Method	Quantity	Unit	Unit Cost	Total Cost
Construction of Checkdams	NA	USER PROVIDED ITEM	1.00	1	\$40,000.00	\$40,000.00

Job Hours: 0.00

Total Cost: \$40,000.00

Climax Mine, M-1977-493

March 2019, DRMS Cost Estimate

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# TRUCK/LOADER TEAM WORK

	/			Fopsoil to 3 Dan		<b>D</b>	,	
Site: Climax Mine		Pern	nit Acti	ion: March 201	9	Permit/Jo	b#: _	M1977493
PROJECT IDENT	<b>TIFICATION</b>							
Task #: H01A		State:	Colora	do	Abl	previation:	Nor	ne
Date: 3/15/2	019 0	County:	Summ	it		Filename:	NA	
User: JLE								
Agency or o	organization nan	ne: DRM	AS					
HOURLY EQUIP	MENT COST	,			Shift ba	usis: <u>1 per da</u>	īv	
<b>_</b>		-	F	Equipment Descr			<u> </u>	
Tr	uck Loader Tea	n -Truck:	Cat	1 1	iption			
		-Loader:		5950H				
Suppor	t Equipment -L			D6T XL				
Dood Mai	-Du ntenance –Moto	mp Area:	NA	T 12M				
Koad Mai		ter Truck:		er Tanker, 5,000	Gal			
		ior rruon.	,, at	er runner, 5,000	<u>oui</u>			
Cost Breakdown:	Truck/Loa	der Team		Support	Equipment	Mai	intena	nce Equipment
		T 1			D	Motor		Water Truck
	Truck	Loader		Load Area	Dump Area	Grader		Water Truck
Utilization-machine:	Truck 100	Loader	100	Load Area 100	Dump Area NA	Grader	100	
bUtilization-machine: Ownership cost/hour:			100 26.14			Grader	100 ).73	100
	100	\$2		100	NA	Grader \$30		100 \$25.30
Ownership cost/hour: Operating cost/hour: %Utilization-riper:	100 \$66.13	\$2	26.14	100 \$52.66	NA NA	Grader \$30 \$30	).73	100 \$25.30 \$36.60
Ownership cost/hour: Operating cost/hour:	100 \$66.13 \$55.75	\$2	26.14 30.84	100 \$52.66 \$46.34	NA NA NA	Grader \$30 \$30	).73 ).60	100 \$25.30 \$36.60 NA \$0.00
Ownership cost/hour: Operating cost/hour: %Utilization-riper: Ripper own. cost/hour:	100 \$66.13 \$55.75 NA	\$2	26.14 30.84 0	100 \$52.66 \$46.34 NA	NA NA NA NA	Grader \$30 \$30 \$30 \$30	).73 ).60 NA	100 \$25.30 \$36.60 NA
Ownership cost/hour: Operating cost/hour: %Utilization-riper: Ripper own. cost/hour:	100 \$66.13 \$55.75 NA NA	\$2 \$3 \$ \$	26.14 30.84 0 50.00	100 \$52.66 \$46.34 NA \$0.00	NA NA NA NA	Grader \$30 \$30 \$30 \$30 \$0 \$0 \$0	).73 ).60 NA ).00	100 \$25.30 \$36.60 NA \$0.00
Ownership cost/hour: Operating cost/hour: %Utilization-riper: Ripper own. cost/hour: Ripper op. cost/hour:	100 \$66.13 \$55.75 NA NA NA	\$2 \$3 \$ \$ \$ \$	26.14 30.84 0 50.00 50.00	100 \$52.66 \$46.34 NA \$0.00 \$0.00	NA NA NA NA NA	Grader \$30 \$30 \$30 \$0 \$0 \$0 \$28	0.73 0.60 NA 0.00	100 \$25.30 \$36.60 NA \$0.00 \$0.00
Ownership cost/hour: Operating cost/hour: %Utilization-riper: Ripper own. cost/hour: Ripper op. cost/hour: Operator cost/hour:	100 \$66.13 \$55.75 NA NA NA \$31.17	\$2 \$3 \$ \$ \$ \$	26.14       30.84       0       60.00       60.00       40.90	100 \$52.66 \$46.34 NA \$0.00 \$0.00 \$41.52	NA NA NA NA NA NA	Grader \$30 \$30 \$30 \$0 \$0 \$0 \$28	0.73 0.60 NA 0.00 0.00 0.00	100 \$25.30 \$36.60 NA \$0.00 \$0.00 \$21.23

## **MATERIAL QUANTITIES**

Initial volume:	7,260	CCY	Swell factor:	1.000	
Loose volume:	7,260	LCY			
Source	e of estimated volume:	6" over 9 acre	S		
Source of	estimated swell factor:	Cat Handbook	C		
Ν	Material Purchase Cost:	\$0.00			
	Total Cost:	\$0.00			

# **HOURLY PRODUCTION**

Truck Capacity:							
Truck Payload (weight) Basi			<b>D</b> 1.7				
Material weight:	1,600		Pounds/I	LCY			
Description:	Top Soil		D 1				
Rated Payload:	87,000		Pounds				
Payload Capacity:	54.38		LCY				
Truck Bed (volume) Basis:							
Struck Volume:	24.20	LCY					
Heaped Volume:	31.40	LCY					
Average Volume:	27.80	LCY					
Adjusted Volume:	31.40	LCY					
Final	Truck Volume	Deced on Nu	mbar of Lo	adar Dagaag	21 61	LCY	
Loading Tool Capacity		Daseu oli inu		auer Fasses.	31.61		
Louding 1001 Cupacity				Buck	et Size Class:	NA	
Rated Capacity:	4.300	LCY (I	heaped)				
Bucket Fill Factor:	1.050		- moist loan	n (100-	110%) 1.050		
Adjusted Capacity:	4.515	LCY		``````````````````````````````````````	,		
Job Condition Corrections	•		Site	Altitude (ft.):	10000 feet		
JOD COndition Corrections		[		. ,	<u>10900</u> ICCI		
	Truck	Load		Source	N		
Altitude Adj:	0.600	1.00		(CAT HE			
Job Efficiency:	0.830	0.83	30	(CAT HE	3)		
Net Correction:	0.498	0.83	30				
Loading Tool Cycle Time:	1	Number of L	oading Too	l Passes Requ		7	passes
Excavators and Front Shove	ls:				Truck:	1	
Machine Cycle Time v			NA				
Selected Value			NA				
Track Loaders –		iption:					
Cycle Time Elements (min.)							
Load: NA	N	laneuver:	NA		Dump: 0.1	00	
Wheel and Trac	k Loaders - Un	adjusted Bas	ic Loader C	•	oad, dump,	0.500	minutes
Cycle Time Factors					Factor (min.)	Source	e
Material:	Mixed mater	rial 0.02			0.020	(Cat H	3)
Stockpile:	Dumped by				0.020	(Cat H	3)
Truck Ownership:	Common ov 0.04	nership of t	rucks and lo	oaders -	-0.040	(Cat HI	3)
Operation:	Constant op	eration -0.04	Ļ		-0.040	(Cat H	3)
Dump Target:					0.000	(Cat H	
			ycle Time A	Adjustment:	-0.040	minute	
				Cycle Time:	0.460	minute	
		Net	Load Time	per Truck:	2.860	minute	s

### Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	1.000	Minutes
Truck Load Time:	2.860	Minutes	Adjusted for site altitude:	2.860	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.667	Minutes

Truck Travel (Haul & Return) Time: maintained 3.0

Truck Travel (Haul & Return) Time: Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	4857.00	8.00	3.00	11.00	857	5.761
2	2258.00	0.00	3.00	3.00	3005	1.728

Return Route:

Haul Time: **7.489** minutes

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2745.60	5.00	3.00	8.00	2155	1.421
2	7656.00	-8.00	3.00	-5.00	3706	2.130

Return Time:	3.551	minutes
Total Truck Cycle Time:	16.567	minutes

Loading Tool unit Production Truck Unit Production	491.27	LCY/Hour	Adjusted for job et	fficiency:	407.75	_ LCY/Hour
	114.46	LCY/Hour	Adjusted for job et	fficiency:	95.01	LCY/Hour
Optimal No. of Trucks:	4	Truck(s)	Selected Number o	f Trucks:	4	Truck(s)
		Adjusted hour	ly truck team production:	380.02	LCY/H	lour
	A	Adjusted single truck/loader team production: 380.02				lour
	Ad	Adjusted multiple truck/loader team production: <b>380.02</b>			LCY/H	lour

Fleet size:	1	Team(s)	Total job time:	19.10	Hours
Unit cost:	\$2.694	/LCY	Total job cost:	\$19,558	

Climax Mine, M-1977-493

March 2019, DRMS Cost Estimate

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# TRUCK/LOADER TEAM WORK

Task description:	3 Dam,	Load and Haul	Biosolids to 3 Da	am Rise				
Site: Climax Mine	Site:       Climax Mine       Permit Action:       March 2019       Permit/Job#:       M1977493							
PROJECT IDENT	TEICATION							
	<u>IIIICATION</u>							
Task #: $H01B$ Date: $3/15/2$	019	State: Colora County: Summ			reviation: <u>No</u> Filename: NA			
User: JLE		Jounty. Junn	III.			L		
Agency or c	organization nam	ne: DRMS						
HOURLY EQUIP	MENT COST	, _		Shift ba	sis: <u>1 per day</u>			
		]	Equipment Descr	iption				
Tr	uck Loader Tear	m -Truck: Cat	740	1				
	<u></u>		Г 950Н					
Suppor	rt Equipment -Lo	mp Area: Cat	D6T XL					
Road Mai	ntenance – Moto		Г 12М					
			ter Tanker, 5,000	Gal.				
Cost Breakdown:	Truck/Loa	der Teom	Support	Equipment	Mainten	ance Equipment		
<u>Cost Dreakdown</u> .	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck		
%Utilization-machine:	100	100	100	NA	100	100		
Ownership cost/hour:	\$66.13	\$26.14	\$52.66	NA	\$30.73	\$25.30		
Operating cost/hour:	\$55.75	\$30.84	\$46.34	NA	\$30.60	\$36.60		
%Utilization-riper:	NA	0	NA	NA	NA	NA		
Ripper own. cost/hour:	NA	\$0.00	\$0.00	NA	\$0.00	\$0.00		
Ripper op. cost/hour:	NA	\$0.00	\$0.00	NA	\$0.00	\$0.00		
Operator cost/hour:	\$31.17	\$40.90	\$41.52	NA	\$28.69	\$21.23		
Unit Subtotals:	\$153.05	\$97.89	\$140.52	NA	\$90.02	\$83.13		
Number of Units:	5	1	1	0	1	1		
Group Subtotals:	Work:	\$863.14	Support:	\$140.52	Maint:	\$173.15		
Total work team cost/		1						

Initial volume:	7,260	CCY	Swell factor:	1.000	
Loose volume:	7,260	LCY			
Source	e of estimated volume:	6" over 9 acres	5		
Source of	estimated swell factor:	Cat Handbook			
Ν	Material Purchase Cost:	\$0.00			
	Total Cost:	\$0.00			

# **HOURLY PRODUCTION**

Truck Capacity:							
Truck Payload (weight) Bas Material weight:	1,600	1	Pounds/LC	v			
Description:	Top Soil			1			
Rated Payload:	87,000		Pounds				
Payload Capacity:	54.38		LCY				
Truck Bed (volume) Basis:							
Struck Volume:	24.20	LCY					
Heaped Volume:	31.40	LCY					
Average Volume:	27.80	LCY					
Adjusted Volume:	31.40	LCY					
Final	Truck Volume	Based on Numb	per of Load	er Passes:	31.61	LCY	
Loading Tool Capacity							
				Bucke	t Size Class:	NA	
Rated Capacity:	4.300	LCY (hea					
Bucket Fill Factor:	1.050	Other - m	oist loam	(100-1	10%) 1.050		
Adjusted Capacity:	4.515	LCY					
Job Condition Corrections	<u>:</u>		Site Alt	titude (ft.): <u>1</u>	<u>0900</u> feet		
	Truck	Loader		Source			
Altitude Adj:	0.600	1.000		(CAT HB)			
Job Efficiency:	0.830	0.830		(CAT HB)			
Net Correction:	0.498	0.830					
Loading Tool Cycle Time:	1	Number of Load	ding Tool P	asses Requi		7	passes
Excavators and Front Shove	<u>els:</u>				Truck:		
Machine Cycle Time							
Selected Value		Ū	ł				
Track Loaders -		iption:					
Cycle Time Elements (min.)						100	
Load: NA	N	laneuver: NA	A		Dump: 0	.100	
Wheel and Trac	k Loaders - Una	adjusted Basic	Loader Cyc		id, dump, aneuver):	0.500	minutes
Cycle Time Factors					Factor (min.	.) Sour	ce
Material:	Mixed mater	rial 0.02			0.020	(Cat H	IB)
Stockpile:					0.020	(Cat H	
Truck Ownership:	Common ow 0.04	nership of truc	ks and load	lers -	-0.040	(Cat H	IB)
Operation:		eration -0.04			-0.040	(Cat H	IB)
Dump Target:					0.000	(Cat H	
			e Time Adj		-0.040	minu	tes
			Loader Cyc		0.460	minu	
		Net Lo	oad Time pe	er Truck:	2.860	minu	tes

### Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	1.000	Minutes
Truck Load Time:	2.860	Minutes	Adjusted for site altitude:	2.860	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.667	Minutes

Truck Travel (Haul & Return) Time: maintained 3.0 Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route

Haul Koute	ð:					
Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	12038.00	5.00	3.00	8.00	1123	10.841

				Haul Time:	10.841	minutes
Return Ro	ute:					
Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	12038.00	-5.00	3.00	-2.00	3706	3.349

Return Time:	3.349	minutes
Total Truck Cycle Time:	19.717	minutes

Loading Tool unit Production Truck Unit Production	491.27	LCY/Hour	Adjusted for job e	fficiency:	407.75	_ LCY/Hour
	96.18	LCY/Hour	Adjusted for job e	fficiency:	79.83	LCY/Hour
Optimal No. of Trucks:	5	Truck(s)	Selected Number of	Selected Number of Trucks:		
		Adjusted hourly truck team production:			LCY/H	Iour
		Adjusted single truck	k/loader team production:	399.14	LCY/H	Iour
	Ad	justed multiple truck	k/loader team production:	399.14	LCY/H	Iour
JOB TIME AND	O COST					

Fleet size:	1	Team(s)	Total job time:	18.19	Hours
Unit cost:	\$2.948	/LCY	Total job cost:	\$21,405	

## BULLDOZER WORK

Climax Mine	Pe	rmit Action:	March 2019	Permit/Jo	b#: <u>M1977493</u>
ROJECT IDENTIFI	CATION				
Task #: H02	State:	Colorado		Abbreviation:	None
Date: 3/15/2019	County:	Summit		Filename:	NA
User: JLE	·				
Agency or organ	ization name: DF	RMS			
HOURLY EQUIPME	NT COST				
Basic Machine: Cat	D7R DS Series II L	GP			
Horsepower: 240			-		
	aight		-		
Attachment: NA	-		=		
	er day		-		
Data Source: (CR			-		
Cost Breakdown:	,		-		
<u>COSt DICardowii</u> .		1	Utilization %		
Ownership Cost/Hour:		\$66.14	NA		
Operating Cost/Hour:		\$63.91	100		
Ripper own.		\$0.00	NA		
Cost/Hour:					
Ripper op. Cost/Hour: Operator Cost/Hour:		\$0.00 \$41.52	0		
operator costribui.		φ11.52	NA		
Total Fleet Cost/Hour: MATERIAL QUANTI Initial Volume: 14,5 Swell factor: 1.00 Loose volume: 14,5	20	_			
Source of estimated volu					
Source of estimated swel	ll Cat Hand	book			
factor:					
HOURLY PRODUCT	ION				
Average push distance:	200 feet				
Unadjusted hourly	289.3 LCY	/hr			
production:					
Matanial	т	4 1 1 1			
Materials consistency	Loose	stockpile 1.2			
description:					
Avaraga push	0 %				
Average push	U %0				
gradient:	11.000 6				
Average site altitude:	11,000 feet				
Matarial waisht	$1.600 \text{ lb}_{\alpha}/\text{I}$ CV				
Material weight:	1,600 lbs/LCY				
Weight description:	Top Soil				
eight debeription.	100 200				

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.100	(50% SL)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.9453

Adjusted unit production:	273.48 LCY/hr		
Adjusted fleet production:	273.48 LCY/hr		

Fleet size:	1 Dozer(s)
Unit cost:	\$0.627/LCY

Total job time:	53.09 Hours
Total job cost:	\$9,109

## BULLDOZER WORK

	Pe	ermit Action:	March 2019	Permit/Jo	b#: <u>M1977493</u>
ROJECT IDENTIFI	CATION				
Task #: I01	State:	Colorado		Abbreviation:	None
Date: 3/15/2019	County:	Summit		Filename:	NA
User: JLE					
Agency or organ	nization name: DI	RMS			
IOURLY EQUIPME	NT COST				
Basic Machine: Cat	t D8T - 8SU				
Horsepower: 310					
	ni-Universal				
Attachment: 3-si	hank ripper				
	er day				
	RG)				
ost Breakdown:					
			Utilization %		
Ownership Cost/Hour:		\$93.62	NA		
Operating Cost/Hour:		\$73.35	100		
Ripper own. Cost/Hour:		\$8.93	NA		
Ripper op. Cost/Hour:		\$3.89	50		
Operator Cost/Hour:		\$41.52	NA		
Total Fleet Cost/Hour:	\$221.31				
IATERIAL QUANT Initial Volume: 1,61 Swell factor: 1.12	ITIES 3		_		
IATERIAL QUANTInitial Volume:1,61Swell factor:1.12Loose volume:1,81	ITIES       3       5       5 LCY		_		
Initial Volume:       1,61         Swell factor:       1.12         Loose volume:       1,81         Source of estimated volume       1	ITIES           3           5           5 LCY           ume:         Climax		_		
Initial Volume:       1,61         Swell factor:       1.12         Loose volume:       1,81         Source of estimated volu       Source of estimated swe	ITIES           3           5           5 LCY           ume:         Climax	  lbook	_		
Initial Volume:       1,61         Swell factor:       1.12         Loose volume:       1,81         Source of estimated volume       1	ITIES           3           5           5 LCY           ume:         Climax	  lbook	_		
Initial Volume:       1,61         Swell factor:       1.12         Loose volume:       1,81         Source of estimated volu       Source of estimated swe	ITIES           3           5           5           5 LCY           ume:         Climax           11         Cat Hance	  lbook	_		
IATERIAL QUANT         Initial Volume:       1,61         Swell factor:       1.12         Loose volume:       1,81         Source of estimated volu       Source of estimated swe         factor:       IOURLY PRODUCT	ITIES 3 5 5 5 LCY ume: Climax 11 Cat Hance TION	lbook			
Initial Volume:       1,61         Swell factor:       1.12         Loose volume:       1,81         Source of estimated volu       Source of estimated swe         factor:       Initial Volume:         Initial Volume:       1,81         Source of estimated volu       Source of estimated swe         factor:       Initial Volume:         Initial Volume:       Initial Volume:         Average push distance:       Initial Volume:	ITIES         3         5         5         5 LCY         ime:         Climax         III         Cat Hand         TION         250 feet				
Initial Volume:       1,61         Swell factor:       1.12         Loose volume:       1,81         Source of estimated volu       Source of estimated swe         factor:       Initial Volume:         Initial Volume:       1,81         Source of estimated volu       Source of estimated swe         factor:       INITIAL PRODUCT         Average push distance:       Unadjusted hourly	ITIES 3 5 5 5 LCY ume: Climax 11 Cat Hance TION				
Initial Volume:       1,61         Swell factor:       1.12         Loose volume:       1,81         Source of estimated volu       Source of estimated swe         factor:       Initial Volume:         Initial Volume:       1,81         Source of estimated volu       Source of estimated swe         factor:       Initial Volume:         Initial Volume:       Initial Volume:         Average push distance:       Initial Volume:	ITIES         3         5         5         5 LCY         ime:         Climax         III         Cat Hand         TION         250 feet				
Initial Volume:       1,61         Swell factor:       1.12         Loose volume:       1,81         Source of estimated volu       Source of estimated swe         factor:       Initial Volume:         Initial Volume:       1,81         Source of estimated volu       Source of estimated swe         factor:       INITIAL PRODUCT         Average push distance:       Unadjusted hourly	ITIES         3         5         5         5         5         5         5         5         5         5         5         5         5         5         10         250 feet         377.8 LCY		  ankment 0.9		
IATERIAL QUANT         Initial Volume:       1,61         Swell factor:       1.12         Loose volume:       1,81         Source of estimated volu       1,81         Source of estimated volu       Source of estimated swe         factor:       Intervention         IOURLY PRODUCT       Average push distance:         Unadjusted hourly       production:	ITIES         3         5         5         5         5         5         5         5         5         5         5         5         5         5         10         250 feet         377.8 LCY	/hr	  ankment 0.9		
IATERIAL QUANT         Initial Volume:       1,61         Swell factor:       1.12         Loose volume:       1,81         Source of estimated volu       Source of estimated swe         Source of estimated swe       factor:         IOURLY PRODUCT       Average push distance:         Unadjusted hourly       production:         Materials consistency       description:	ITIES         3         5         5         5         5         5         5         5         5         5         5         5         5         5         11         Cat Hand	/hr	  ankment 0.9		
IATERIAL QUANT         Initial Volume:       1,61         Swell factor:       1.12         Loose volume:       1,81         Source of estimated volu       Source of estimated swe         Source of estimated swe       factor:         IOURLY PRODUCT       Average push distance:         Unadjusted hourly       production:         Materials consistency       description:         Average push       Statemate	ITIES         3         5         5         5         5         5         5         5         5         5         5         5         5         5         10         250 feet         377.8 LCY	/hr	  ankment 0.9		
IATERIAL QUANT         Initial Volume:       1,61         Swell factor:       1.12         Loose volume:       1,81         Source of estimated volu       Source of estimated swe         Source of estimated swe       factor:         IOURLY PRODUCT       Average push distance:         Unadjusted hourly       production:         Materials consistency       description:         Average push       gradient:	ITIES         3         5         5         5         5         5         5         5         5         5         5         5         5         5         10         250 feet         377.8 LCY         Compa         0 %	/hr	  ankment 0.9		
IATERIAL QUANT         Initial Volume:       1,61         Swell factor:       1.12         Loose volume:       1,81         Source of estimated volu       Source of estimated swe         Source of estimated swe       factor:         IOURLY PRODUCT       Average push distance:         Unadjusted hourly       production:         Materials consistency       description:         Average push       Statemate	ITIES         3         5         5         5         5         5         5         5         5         5         5         5         5         5         11         Cat Hand	/hr	  ankment 0.9		
IATERIAL QUANT         Initial Volume:       1,61         Swell factor:       1.12         Loose volume:       1,81         Source of estimated volu       Source of estimated swe         Source of estimated swe       factor:         IOURLY PRODUCT       Average push distance:         Unadjusted hourly       production:         Materials consistency       description:         Average push       gradient:         Average site altitude:       Average site altitude:	ITIES         3         5         5         5         5         5         5         5         5         5         5         5         5         5         5         5         11         250 feet         377.8 LCY         Compa         0 %         11,000 feet	/hr	  ankment 0.9		
IATERIAL QUANT         Initial Volume:       1,61         Swell factor:       1.12         Loose volume:       1,81         Source of estimated volu       Source of estimated swe         Source of estimated swe       factor:         IOURLY PRODUCT       Average push distance:         Unadjusted hourly       production:         Materials consistency       description:         Average push       gradient:	ITIES         3         5         5         5         5         5         5         5         5         5         5         5         5         5         10         250 feet         377.8 LCY         Compa         0 %	/hr	  ankment 0.9		

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.100	(50% SL)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4447

Adjusted unit production:	168.01 LCY/hr
Adjusted fleet production:	168.01 LCY/hr

Fleet size:	1 Dozer(s)
Unit cost:	\$1.317/LCY

Total job time:	10.80 Hours
Total job cost:	\$2,390

Climax Mine, M-1977-493

March 2019, DRMS Cost Estimate

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# TRUCK/LOADER TEAM WORK

Task description:	Pond Sł	10p, Load and H	Iaul topsoil to Po	ond Shop		
Site:       Climax Mine       Permit Action:       March 2019       Permit/Job#:       M1977493						
PROJECT IDENT	TIFICATION					
Task #: $102$ Date: $3/15/2$ User: JLE	2019 0	State: Color County: Summ			Filename: N	A
Agency or o	organization nam	ne: DRMS				
HOURLY EQUIP	MENT COST	-		Shift ba	sis: <u>1 per day</u>	
			Equipment Descr	iption		
Tr	uck Loader Tear		740 T 950H			
Suppo	rt Equipment -Lo		D6T XL			
	-Du	mp Area: NA				
Road Ma	intenance – Moto		T 12M	<u>C 1</u>		
	-wat	ter Truck: Wa	ter Tanker, 5,000	Gal.		
Cost Breakdown:	Truck/Loa	der Team	Support	Equipment	Mainter	nance Equipment
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	100	NA	100	100
Ownership cost/hour:	\$66.13	\$26.14	\$52.66	NA	\$30.73	\$25.30
Operating cost/hour:	\$55.75	\$30.84	\$46.34	NA	\$30.60	
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$0.00	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$0.00	NA	\$0.00	\$0.00
Operator cost/hour:	\$31.17	\$40.90	\$41.52	NA	\$28.69	\$21.23
Unit Subtotals:	\$153.05	\$97.89	\$140.52	NA	\$90.02	\$83.13
Number of Units:	2	1	1	0	1	1
Group Subtotals:	Work:	\$403.99	Support:	\$140.52	Maint:	\$173.15
Total work team cost/hour: <u>\$717.66</u>						

Initial volume:	538	CCY	Swell factor:	1.000	
Loose volume:	538	LCY			
Source	e of estimated volume:	6" over 9 acres	5		
Source of estimated swell factor:		Cat Handbook			
Material Purchase Cost:		\$0.00			
	Total Cost:	\$0.00			
	-				

# **HOURLY PRODUCTION**

Truck Capacity:							
Truck Payload (weight) Basi			D 17				
Material weight:	1,600		Pounds/L	CY			
Description:	Top Soil		D 1.				
Rated Payload:	87,000		Pounds				
Payload Capacity:	54.38		LCY				
Truck Bed (volume) Basis:							
Struck Volume:	24.20	LCY					
Heaped Volume:	31.40	LCY					
Average Volume:	27.80	LCY					
Adjusted Volume:	31.40	LCY					
Aujusted Volume.	51.40	LUI					
Final	Truck Volume	Based on Nu	mber of Loa	der Passes:	31.61	LCY	
Loading Tool Capacity							
	1 200		1	Buck	et Size Class:	NA	
Rated Capacity:	4.300	LCY (h	· ·	(100	1100() 1.050		
Bucket Fill Factor:	1.050		moist loam	(100-	110%) 1.050		
Adjusted Capacity:	4.515	LCY					
Job Condition Corrections	<u>:</u>		Site A	Altitude (ft.):	<u>10900</u> feet		
	Truck	Load	ler	Source			
Altitude Adj:	0.600	1.00	00	(CAT HB	5)		
Job Efficiency:	0.830	0.83	0	(CAT HB	)		
Net Correction:	0.498	0.83	60				
Loading Tool Cycle Time:	1	Number of Lo	oading Tool	Passes Requ	ired to Fill	7	passes
Excavators and Front Shove	<u>ls:</u>		-	-	Truck:	/	_
Machine Cycle Time v			NA NA				
Selected Value Track Loaders –			INA				
Cycle Time Elements (min.)		iption					
Load: NA		laneuver:	NA		Dump: 0.1	00	
		-		1 TD' (1			• ,
Wheel and Trac	k Loaders - Una	adjusted Basi	ic Loader C		haneuver):	0.500 ⁿ	ninutes
Cycle Time Factors					Factor (min.)	Source	
Material:	Mixed mater	rial 0.02			0.020	(Cat HB	
Stockpile:	Dumped by				0.020	(Cat HB	
Truck Ownership:	Common ow 0.04	nership of tr	rucks and lo	aders -	-0.040	(Cat HB	)
Operation:	Constant ope	eration -0.04			-0.040	(Cat HB	<u>.</u>
Dump Target:					0.000	(Cat HB	<u> </u>
Dump Turget.	r torinitar dal		ycle Time A	diustment:	-0.040	minutes	<u> </u>
			ed Loader C		0.460	minutes	
			Load Time		2.860	minutes	

### Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	1.000	Minutes
Truck Load Time:	2.860	Minutes	Adjusted for site altitude:	2.860	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.667	Minutes

Haul Time:

Truck Travel (Haul & Return) Time: maintained 3.0 Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

3.155

minutes

Haul Route

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2624.00	8.00	3.00	11.00	857	3.155

Return Ro	ute:					
Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2624.00	-8.00	3.00	-5.00	3706	0.744

Return Time:	0.744	minutes
Total Truck Cycle Time:	9.426	minutes

Loading Tool unit Production <u>491.2</u> Truck Unit Production	491.27	_ LCY/Hour	Adjusted for job ef	ficiency:	407.75	_ LCY/Hour
	201.18	LCY/Hour	Adjusted for job ef	ficiency:	166.98	LCY/Hour
Optimal No. of Trucks:	2	Truck(s)	Selected Number of	f Trucks:	2	Truck(s)
		Adjusted hour	ly truck team production:	333.97	LCY/H	Iour
	А	•	k/loader team production:	333.97	LCY/H	Iour
	Adj	usted multiple truck	k/loader team production:	333.97	LCY/H	Iour
JOB TIME ANI	) COST					

Fleet size:	1	Team(s)	Total job time:	1.61	Hours
Unit cost:	\$2.149	/LCY	Total job cost:	\$1,156	

#### BULLDOZER WORK

Task description:	Pond Shop, Spre	ad topsoil			
te: Climax Mine	Per	mit Action:	March 2019	Permit/Job	#: <u>M1977493</u>
PROJECT IDENTIFI	CATION				
Task #:       I03         Date:       3/15/2019         User:       JLE	State: County:	Colorado Summit			None 103
Agency or organ	ization name: DR	MS			
HOURLY EQUIPME	NT COST				
Horsepower: 240 Blade Type: Stra Attachment: 3-st	hight nank ripper er day	GP			
Cost Breakdown: Ownership Cost/Hour:		\$66.14	Utilization % NA		
Operating Cost/Hour: Ripper own.		\$63.91	100		
Cost/Hour:		\$6.02	NA		
Ripper op. Cost/Hour: Operator Cost/Hour:		\$2.06 \$41.52	50 NA		
Total Fleet Cost/Hour: MATERIAL QUANTI Initial Volume: 538 Swell factor: 1.00 Loose volume: 538	0	-			
Source of estimated volu Source of estimated swell factor:	me: Climax	book			
HOURLY PRODUCT	ION				
Average push distance: Unadjusted hourly production:	200 feet 289.3 LCY/	hr			
Materials consistency description:	Compa	cted fill or en	nbankment 0.9		
Average push gradient: Average site altitude:	0 %				
-					
Material weight:	1,600 lbs/LCY				
Weight description:	Top Soil				

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.100	(50% SL)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.7090

Adjusted unit production:	205.11 LCY/hr
Adjusted fleet production:	<b>205.11</b> LCY/hr

Fleet size:	1 Dozer(s)
Unit cost:	\$0.876/LCY

Total job time:	2.62 Hours
Total job cost:	\$471

Climax Mine, M-1977-493

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# TRUCK/LOADER TEAM WORK

Task description:	Mayflov	wer TSF, Load	and Haul Subsoil	to TSF		
Site: Climax Mine		Permit Ac	ction: March 201	9	Permit/Job#:	M1977493
PROJECT IDENT	<b>TIFICATION</b>					
Task #: J01A		State: Color			previation: Nor	
Date: $3/15/2$ User: JLE	2019 0	County: Sum	nit		Filename: NA	<u> </u>
Agency or o	organization nan	ne: DRMS				
HOURLY EQUIP	MENT COST	<u>.</u>		Shift ba	sis: <u>1 per day</u>	
			Equipment Descr	iption		
Tr	ruck Loader Tear		t 740	-		
	rt Equipment -L		AT 950H t D6T XL			
Suppo		imp Area: NA				
Road Ma	intenance – Moto		T 12M			
	-Wa	ter Truck: Wa	ater Tanker, 5,000	Gal.		
Cost Breakdown:	Truck/Loa	der Team	Support	Equipment	Maintena	ance Equipment
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	100	NA	100	100
Ownership cost/hour:	\$66.13	\$26.14	\$52.66	NA	\$30.73	\$25.30
Operating cost/hour:	\$55.75	\$30.84	\$46.34	NA	\$30.60	\$36.60
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$0.00	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$0.00	NA	\$0.00	\$0.00
Operator cost/hour:	\$31.17	\$40.90	\$41.52	NA	\$28.69	\$21.23
Unit Subtotals:	\$153.05	\$97.89	\$140.52	NA	\$90.02	\$83.13
Number of Units:	5	1	1	0	1	1
Group Subtotals:	Work:	\$863.14	Support:	\$140.52	Maint:	\$173.15

Total work team cost/hour: \$1,176.81

### **MATERIAL QUANTITIES**

Initial volume:	179,080	CCY	Swell factor:	1.000
Loose volume:	179,080	LCY		
Source of	e of estimated volume: estimated swell factor: Material Purchase Cost: Total Cost:	6" over 222 Cat Handbo \$0.00 \$0.00		019 Climax Estiamte)

# **HOURLY PRODUCTION**

Fruck Capacity:					
rruch Capacity.					
Fruck Payload (weight) Basi	<u>s:</u>				
Material weight:	2,650	Pound	ls/LCY		
Description:	Decomposed	l rock - 25% Rock, 75	5% Earth		
Rated Payload:	87,000	Pound	ls		
Payload Capacity:	32.83	LCY			
Fruck Bed (volume) Basis:					
Struck Volume:	24.20	LCY			
Heaped Volume:	31.40	LCY			
Average Volume:	27.80	LCY			
Adjusted Volume:	31.40	LCY			
_					
<b>D</b> ¹	T	Daard on Normhon of	I and an Danasa	21 (1	LCV
ГШа	Truck volume	Based on Number of	Loader Passes:	31.61	LCY
Loading Tool Capacity					
			Buc	ket Size Class: N	IA
Rated Capacity:	4.300	LCY (heaped)			
Bucket Fill Factor:	1.050	Other - moist lo	oam (100	-110%) 1.050	
Adjusted Capacity:	4.515	LCY	X	,	
ob Condition Corrections	:	Si	ite Altitude (ft.)	11000 feet	
			· · ·		
	<b>m</b> 1		a		
A1.*. 1 A 1*	Truck	Loader	Source		
Altitude Adj:	0.600	1.000	(CAT H	3)	
Altitude Adj: Job Efficiency:				3)	
Job Efficiency:	0.600 0.830	1.000 0.830	(CAT H	3)	
•	0.600	1.000	(CAT H	3)	
Job Efficiency:       Net Correction:	0.600 0.830 <b>0.498</b>	1.000 0.830 <b>0.830</b>	(CAT H) (CAT H)	3) 3)	Dasses
Job Efficiency: Net Correction: Loading Tool Cycle Time:	0.600 0.830 <b>0.498</b>	1.000 0.830	(CAT H) (CAT H)	3) 3) uired to Fill	7 passes
Job Efficiency: Net Correction: Loading Tool Cycle Time:	0.600 0.830 <b>0.498</b>	1.000 0.830 <b>0.830</b>	(CAT H) (CAT H)	3) 3)	7 passes
Job Efficiency: Net Correction: Loading Tool Cycle Time: Excavators and Front Shove	0.600 0.830 0.498	1.000 0.830 <b>0.830</b> Number of Loading T	(CAT H) (CAT H)	3) 3) uired to Fill	7 passes
Job Efficiency: Net Correction: Loading Tool Cycle Time:	0.600 0.830 <b>0.498</b> 	1.000           0.830           0.830           Number of Loading T           on Rating:         NA	(CAT H) (CAT H)	3) 3) uired to Fill	7 passes
Job Efficiency: Net Correction: Loading Tool Cycle Time: Excavators and Front Shove Machine Cycle Time v Selected Value v	0.600 0.830 <b>0.498</b> 	1.000         0.830         0.830         Number of Loading T         on Rating:       NA         ic Rating:       NA	(CAT H) (CAT H)	3) 3) uired to Fill	7 passes
Job Efficiency: Net Correction: Loading Tool Cycle Time: Excavators and Front Shove Machine Cycle Time v Selected Value Track Loaders –	0.600 0.830 <b>0.498</b>         	1.000         0.830         0.830         Number of Loading T         on Rating:       NA         ic Rating:       NA	(CAT H) (CAT H)	3) 3) uired to Fill	7 passes
Job Efficiency: Net Correction: Loading Tool Cycle Time: Excavators and Front Shove Machine Cycle Time v Selected Value Track Loaders –	0.600 0.830 <b>0.498</b>         	1.000         0.830         0.830         Number of Loading T         on Rating:       NA         ic Rating:       NA	(CAT H) (CAT H)	3) 3) uired to Fill	7 passes
Job Efficiency: Net Correction: Loading Tool Cycle Time: Excavators and Front Shove Machine Cycle Time v Selected Value Track Loaders – Cycle Time Elements (min.)	0.600 0.830 0.498 	1.000         0.830         0.830         Number of Loading T         on Rating:       NA         ic Rating:       NA         ription:	(CAT H) (CAT H)	3) 3) uired to Fill Truck:	/
Job Efficiency: Net Correction: Loading Tool Cycle Time: Excavators and Front Shove Machine Cycle Time v Selected Value	0.600 0.830 0.498 	1.000         0.830         0.830         Number of Loading T         on Rating:       NA         ic Rating:       NA	(CAT H) (CAT H)	3) 3) uired to Fill	/
Job Efficiency: Net Correction: Loading Tool Cycle Time: Excavators and Front Shove Machine Cycle Time v Selected Value v Track Loaders – Cycle Time Elements (min.) Load: NA	0.600 0.830 0.498 els: s. Job Conditic within this Bas Material Desc: :	1.000       0.830       0.830       Number of Loading T       on Rating:     NA       ic Rating:     NA       ription:	(CAT H)       (CAT H)       J       Tool Passes Req	3) 3) uired to Fill Truck: Dump: 0.100	)
Job Efficiency: Net Correction: Loading Tool Cycle Time: Excavators and Front Shove Machine Cycle Time v Selected Value v Track Loaders – Cycle Time Elements (min.) Load: NA	0.600 0.830 0.498 els: s. Job Conditic within this Bas Material Desc: :	1.000         0.830         0.830         Number of Loading T         on Rating:       NA         ic Rating:       NA         ription:	CAT HI (CAT HI COOI Passes Req	3) 3) uired to Fill Truck: Dump:0.100 0ad, dump,0	/
Job Efficiency: Net Correction: Loading Tool Cycle Time: Excavators and Front Shove Machine Cycle Time v Selected Value v Track Loaders – Cycle Time Elements (min.) Load: <u>NA</u> Wheel and Trac	0.600 0.830 0.498 els: s. Job Conditic within this Bas Material Desc: :	1.000       0.830       0.830       Number of Loading T       on Rating:     NA       ic Rating:     NA       ription:	CAT HI (CAT HI COOI Passes Req	3) 3) uired to Fill Truck: Dump: 0.100 oad, dump, 0 maneuver): 0	) minutes
Job Efficiency: Net Correction: Loading Tool Cycle Time: Excavators and Front Shove Machine Cycle Time v Selected Value v Track Loaders – Cycle Time Elements (min.) Load: NA Wheel and Trac Cycle Time Factors	0.600 0.830 0.498 els: s. Job Condition within this Bas Material Desc :  k Loaders - Un	1.000         0.830         0.830         0.830         Number of Loading T         on Rating:       NA         ic Rating:       NA         rription:	CAT HI (CAT HI COOI Passes Req	3) 3) uired to Fill Truck: Dump: 0 0 0 0 0 0 0 0 0 0 0 0 0	) .500 minutes Source
Job Efficiency: Net Correction: Loading Tool Cycle Time: Excavators and Front Shove Machine Cycle Time v Selected Value v Track Loaders – Cycle Time Elements (min.) Load: NA Wheel and Trac Cycle Time Factors Material:	0.600 0.830 0.498 els: s. Job Conditic within this Bas Material Desc: k Loaders - Un Mixed mate	1.000         0.830         0.830         0.830         Number of Loading T         on Rating:       NA         ic Rating:       NA         ription:	CAT HI (CAT HI COOI Passes Req	3) 3) uired to Fill Truck: Dump: 0 0 0 0 0 0 0 0 0 0 0 0 0	) .500 minutes Source (Cat HB)
Job Efficiency: Net Correction: Loading Tool Cycle Time: Excavators and Front Shove Machine Cycle Time v Selected Value v Track Loaders – Cycle Time Elements (min.) Load: NA Wheel and Trac Cycle Time Factors Material: Stockpile:	0.600 0.830 0.498 els: s. Job Conditic within this Bas Material Desc: k Loaders - Un Mixed mate Dumped by	1.000         0.830         0.830         Number of Loading T         on Rating:       NA         ic Rating:       NA         ription:	CAT HI (CAT HI COOI Passes Req	3) 3) uired to Fill Truck: Dump: 0 0 0 0 0 0 0 0 0 0 0 0 0	) .500 minutes Source
Job Efficiency: Net Correction: Loading Tool Cycle Time: Excavators and Front Shove Machine Cycle Time v Selected Value v Track Loaders – Cycle Time Elements (min.) Load: NA Wheel and Trac Cycle Time Factors Material:	0.600 0.830 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.	1.000         0.830         0.830         0.830         Number of Loading T         on Rating:       NA         ic Rating:       NA         ription:	CAT HI (CAT HI COOI Passes Req	3) 3) uired to Fill Truck: Dump: 0 0 0 0 0 0 0 0 0 0 0 0 0	) minutes .500 Minutes .500 (Cat HB) (Cat HB)
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Job Efficiency: Net Correction: Loading Tool Cycle Time: Excavators and Front Shove Machine Cycle Time v Selected Value Track Loaders – Cycle Time Elements (min.) Load: NA Wheel and Trac Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	0.600 0.830 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.4988 0.4988 0.4988 0.4988 0.4988 0.4988 0.4988 0.4988 0	1.000         0.830         0.830         Number of Loading T         on Rating:       NA         ic Rating:       NA         ription:	CAT HI (CAT HI COOI Passes Req	3) 3) uired to Fill Truck: Dump: 0 0 0 0 0 0 0 0 0 0 0 0 0	) minutes .500 Minutes (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)
Job Efficiency: Net Correction: Loading Tool Cycle Time: Excavators and Front Shove Machine Cycle Time v Selected Value v Track Loaders – Cycle Time Elements (min.) Load: NA Wheel and Trac Cycle Time Factors Material: Stockpile: Truck Ownership:	0.600 0.830 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.4986 0.498 0.4988 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.49	1.000         0.830         0.830         Number of Loading T         on Rating:       NA         ic Rating:       NA         ription:	CAT HI (CAT HI ) Fool Passes Req er Cycle Time (I ) d loaders -	3) 3) uired to Fill Truck: Dump: 0 0 0 0 0.100 0 0.100 0 0 0 0 0 0 0 0 0 0 0 0	) minutes .500 Minutes (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)
Job Efficiency: Net Correction: Loading Tool Cycle Time: Excavators and Front Shove Machine Cycle Time v Selected Value Track Loaders – Cycle Time Elements (min.) Load: NA Wheel and Trac Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	0.600 0.830 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.4988 0.4988 0.4988 0.4988 0.4988 0.4988 0.4988 0.4988 0	1.000         0.830         0.830         Number of Loading T         on Rating:       NA         ic Rating:       NA         ription:	CAT HI (CAT HI COOI Passes Req Fool Passes Req er Cycle Time (I d loaders -	3) 3) uired to Fill Truck: Dump: 0 0 0 0.100 0.020 0.020 0.020 0.020 0.020 0.020 0.040 0.000 0.000 0.000 0.000 0.000 0.000	) .500 minutes Source (Cat HB) (Cat HB)
Job Efficiency: Net Correction: Loading Tool Cycle Time: Excavators and Front Shove Machine Cycle Time v Selected Value Track Loaders – Cycle Time Elements (min.) Load: NA Wheel and Trac Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	0.600 0.830 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.498 0.4988 0.4988 0.4988 0.4988 0.4988 0.4988 0.4988 0.4988 0	1.000         0.830         0.830         Number of Loading T         on Rating:       NA         nic Rating:       NA         ription:	CAT HI (CAT HI COOI Passes Req Fool Passes Req er Cycle Time (I d loaders -	3) 3) uired to Fill Truck: Dump: 0 0 0 0 0.100 0 0.100 0 0 0 0 0 0 0 0 0 0 0 0	) minutes .500 Minutes (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)

#### Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	1.000	Minutes
Truck Load Time:	2.860	Minutes	Adjusted for site altitude:	2.860	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.667	Minutes

Truck Travel (Haul & Return) Time: maintained 3.0

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft) 3115.00	Grade (%) 6.30	Roll. Res (%) 3.00	Total Res (%) 9.30	Velocity (fpm) 983	Travel Time (min) 3.271	
2	11300.00	-7.70	3.00	-4.70	2721	4.281	
Return Ro	ite:			Haul Time:	7.552	minutes	
Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)	
1	11300.00	7.70	3.00	10.70	1610	7.101	
2	3115.00	-6.30	3.00	-3.30	3706	0.874	
Loading Too	al unit		Total True	Return Time: ck Cycle Time:	-		
-	uction 491.27	LCY/Hour		Adjusted for jo	ob efficiency:	407.75	LCY/Hour
	90.07	LCY/Hour		Adjusted for jo	ob efficiency:	74.76	LCY/Hour
Optimal No. of T	rucks: 5	Truck(s)		Selected Numb	er of Trucks:	5	Truck(s)
				team productio			
		Adjusted single					
	F	Adjusted multiple	e truck/loader	team productio	n: 373.	79 LCY/I	Hour
JOB TIM	IE AND COST						
Fleet	size: 1	Team(s)	Т	otal job time:	479.0	<b>9</b> Hou	irs
Unit	cost: \$3.148	/LCY	Т	otal job cost:	\$563,8	01	

Climax Mine, M-1977-493

March 2019, DRMS Cost Estimate

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# TRUCK/LOADER TEAM WORK

Task description:	Mayflov	wer TSF,	Load a	and Haul Topsoi	l to TSF			
Site: Climax Mine		Permit Action: March 2019 Permit/Job#: 1					0#: <u>N</u>	11977493
PROJECT IDEN	TIFICATION							
Task #: J01B	8	State:	Colora	ado	Abb	previation:	None	;
	/2019	County:	Summ	nit		Filename:	NA	
User: JLE								
Agency or	organization nan	ne: DRI	MS					
HOURLY EQUI	PMENT COST	]			Shift ba	sis: <u>1 per da</u>	<u>y</u>	
			]	Equipment Descr	iption			
Т	Fruck Loader Tea		Cat					
		-Loader:		Г 950Н				
Supp	ort Equipment -L	oad Area: imp Area:	NA	D6T XL				
Road M	aintenance – Moto			Г 12М				
		ter Truck:	_	ter Tanker, 5,000	Gal.			
Cost Breakdown:	Truck/Loa	1			Equipment			ce Equipment
	Truck	Loader		Load Area	Dump Area	Motor Grader		Water Truck
%Utilization-machine:	100		100	100	NA	1	00	100
Ownership cost/hour:	\$66.13	\$2	26.14	\$52.66	NA	\$30	.73	\$25.30
Operating cost/hour:	\$55.75	\$	30.84	\$46.34	NA	\$30	.60	\$36.60
%Utilization-riper:	NA		0	NA	NA	1	NA	NA
Ripper own. cost/hour:	NA	:	\$0.00	\$0.00	NA	\$0	.00	\$0.00
Ripper op. cost/hour:	NA	:	\$0.00	\$0.00	NA	\$0	.00	\$0.00
Operator cost/hour:	\$31.17	\$4	40.90	\$41.52	NA	\$28	.69	\$21.23
Unit Subtotals:	\$153.05	\$	97.89	\$140.52	NA	\$90	.02	\$83.13
Number of Units:	5		1	1	0		1	1
Group Subtotals:	Work:	\$863.14		Support:	\$140.52	Mai	nt:	\$173.15
Group Subtotals:				Support:	\$140.52	Mai	nt:	\$173.15

Total work team cost/hour: \$1,176.81

#### **MATERIAL QUANTITIES**

Initial volume:	179,080	CCY	Swell factor:	1.000
Loose volume:	179,080	LCY		
Source	ce of estimated volume:	6" over 222	2 acres (Rev. Feb 2	019 Climax Estiamte)
Source of	estimated swell factor:	Cat Handbo	ook	
ľ	Material Purchase Cost:	\$0.00		
	Total Cost:	\$0.00		

# **HOURLY PRODUCTION**

Truck Capacity:							
Truck Payload (weight) Basi			D 1. /I	CV			
Material weight:	1,600		Pounds/L	LΥ			
Description: Rated Payload:	Top Soil 87,000		Pounds				
Payload Capacity:	54.38		LCY				
rayioau Capacity.	54.58						
Truck Bed (volume) Basis:							
Struck Volume:	24.20	LCY					
Heaped Volume:	31.40	LCY					
Average Volume:	27.80	LCY					
Adjusted Volume:	31.40	LCY					
Final	Truck Volume	Based on Nu	umber of Lo	ader Passes:	31.61	LCY	
Loading Tool Capacity							
<u> </u>				Buck	et Size Class:	NA	
Rated Capacity:	4.300		heaped)				
Bucket Fill Factor:	1.050	Other -	- moist loan	n (100-	110%) 1.050		
Adjusted Capacity:	4.515	LCY					
Job Condition Corrections	<u>:</u>		Site	Altitude (ft.):	<u>11000</u> feet		
	Truck	Load	ler	Source			
Altitude Adj:	0.600	1.00	00	(CAT HB	3)		
Job Efficiency:	0.830	0.83	30	(CAT HB	3)		
Net Correction:	0.498	0.83	30				
Loading Tool Cycle Time:		Number of L	oading Too	l Passes Requ	ired to Fill	7 passe	es
Excavators and Front Shove	ls:				Truck:	1	
Machine Cycle Time v			NA				
Selected Value			NA				
Track Loaders –		ription:					
Cycle Time Elements (min.)							
Load: NA	N	Ianeuver:	NA		Dump: 0.1	00	
Wheel and Trac	k Loaders - Un	adjusted Bas	ic Loader C	•	oad, dump, naneuver):	0.500 minutes	
Cycle Time Factors					Factor (min.)	Source	
Material:	Mixed mate				0.020	(Cat HB)	
Stockpile:	Dumped by				0.020	(Cat HB)	
Truck Ownership:	Common ov 0.04	wnership of t	rucks and lo	oaders -	-0.040	(Cat HB)	
Operation:		eration -0.04	-		-0.040	(Cat HB)	
Dump Target:	Nominal tar				0.000	(Cat HB)	
1 0		-	ycle Time A	djustment:	-0.040	minutes	
			ed Loader C		0.460	minutes	
			Load Time		2.860	minutes	

#### Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	1.000	Minutes
Truck Load Time:	2.860	Minutes	Adjusted for site altitude:	2.860	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.667	Minutes

maintained 3.0

Truck Travel (Haul & Return) Time: Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3115.00	6.30	3.00	9.30	983	3.271
2	11300.00	-7.70	3.00	-4.70	2721	4.281

Return Route:

Haul Time: 7.552 minutes

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	11300.00	7.70	3.00	10.70	1610	7.101
2	3115.00	-6.30	3.00	-3.30	3706	0.874

Return Time:	7.975	minutes
Total Truck Cycle Time:	21.054	minutes

Loading Tool unit Production Truck Unit Production	491.27	LCY/Hour	Adjusted for job ef	ficiency:	407.75	LCY/Hour
	90.07	LCY/Hour	Adjusted for job ef	ficiency:	74.76	LCY/Hour
Optimal No. of Trucks:	5	Truck(s)	Selected Number of	f Trucks:	5	Truck(s)
		5	ly truck team production:	373.79	LCY/H	
	A	5 0	x/loader team production: x/loader team production:	373.79 373.79	LCY/H LCY/H	
		· 1	· _			

Fleet size:	1	Team(s)	Total job time:	479.09	Hours
Unit cost:	\$3.148	/LCY	Total job cost:	\$563,801	

# BULLDOZER WORK

Climax Mine	Pe	ermit Action:	March 2019	Permit/Jo	b#: <u>M1977493</u>
PROJECT IDENTIF	<b>ICATION</b>				
Task #: J02A	State:	Colorado		Abbreviation:	None
Date: 3/15/2019 User: JLE	County:	Summit		Filename:	NA
Agency or orga	nization name:	RMS			
HOURLY EQUIPME	ENT COST				
Basic Machine: Ca	at D8T - 8SU		_		
Horsepower: 31			-		
• • • • • • • • • • • • • • • • • • • •	mi-Universal		-		
Attachment: NA			-		
	per day RG)		-		
Cost Breakdown:			-		
			Utilization %		
Ownership Cost/Hour:		\$93.62	NA		
Operating Cost/Hour:		\$73.35	100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.52	NA		
Swell factor: 1.0	9,080				
Source of estimated vol	lume: 6" Over 2	244 Acres			
Source of estimated swe	ell Cat Hand	lbook			
factor:					
HOURLY PRODUCT	<u>FION</u>				
Average push distance: Unadjusted hourly production:	250 feet 377.8 LCY	/hr			
Materials consistency description:	Loose	stockpile 1.2			
Average push gradient: Average site altitude:	0 %				
Tretage site alutude.					
Material weight:	2,650 lbs/LCY				

ob Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5187

Adjusted unit production:	195.96 LCY/hr
Adjusted fleet production:	<b>391.92</b> LCY/hr

Fleet size:	2 Dozer(s)
Unit cost:	\$1.064/LCY

Total job time:	456.93 Hours
Total job cost:	\$190,534

### BULLDOZER WORK

Basic Machine:       Cat D8T - 8SU         Horsepowe:       310         Blade Type:       Semi-Universal         Attachmet:       NA         Shift Basis:       1 per day         Data Source:       (CRG)         was shift Basis:       1 per day         Data Source:       (CRG)         was shift Basis:       1 per day         Data Source:       (CRG)         was shift Basis:       1 per day         Data Source:       (CRG)         was shift Basis:       1 per day         Operating Cost/Hour:       \$93.62         Ripper own.       \$0.00         Ripper ov.       \$0.00         Operating Cost/Hour:       \$208.49         Total unit Cost/Hour:       \$208.49         Total Fleet Cost/Hour:       \$416.99         Initial Volume:       179.080         Swell factor:       1000         Loose volume:       179.080 LCY         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated swell       Cat Handbook         Bactor:	Task #:       J02B       State:       Colorado       Abbreviation:       Nne         Date:       3/15/2019       County:       Summit       Filename:       NA         degreey or organization name:       DRMS         OULL FOULPHENT COST         Basic Machine:       Cat 0         Ownership Cost/Hour:       \$93.62         Staff Basis:       1 per day         Dara Source:       Cost/Hour:         \$20.00       NA         Ripper own.       \$0.00         Cost/Hour:       \$20.00         Staff 5.29       NA         Dotal Fleet Cost/Hour:       \$208.49         Total Fleet Cost/Hour:       Cat Handbook         Bacter:       Cat Handbook         Coc	Climax Mine	Pe	rmit Action:	March 2019	Permit/Jo	b#: <u>M1977493</u>
Date:       3/15/2019       County:       Summit       Filename:       NA         Agency or organization name:       DRMS         OURLY EQUIPMENT COST         Basic Machine:       Cat D8T - 8SU         Horsepower:       310         Blade Type:       Seni-Universal         Attachment:       NA         Shift Basis:       1 per day         Data Source:       (CRG)         stift Basis:       1 per day         Data Source:       (CRG)         Stift Basis:         Deperating Cost/Hour:       \$93.62         NA       Source         Ripper own.       \$0.00         Cost/Hour:       \$0.00         Operator Cost/Hour:       \$208.49         Fotal unit Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$41.52         Swell Factor:       1000         Loose volume:       1'90,80         Swell factor:       1000         Source of estimated volume:       6' over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated swell       Cat Handbook         actor:	Date:       3/15/2019       County:       Summit       Filename:       NA         Agency or organization name:       DRMS         OURLY EQUIPMENT COST         Basic Machine:       Cat DST - 8SU         Horsepower:       310         Blade Type:       Semi-Universal         Attachment:       NA         Shift Basi:       1per day         Data Source:       (CRG)         Sout Breakdown       Ownership Cost/Hour:         Ownership Cost/Hour:       \$93.62         Cost/Hour:       \$0.00         Ripper own.       \$0.00         Cost/Hour:       \$0.00         Ripper own.       \$0.00         Cost/Hour:       \$208.49         Fotal Piet Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$100         Swell facto:       1.000         Loose volume:       1.000         Source of estimated swell       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated swell       Gr ever 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated swell       377.8 LCY/hr         Cat	ROJECT IDENTIFI	CATION				
User:       ILE         Agency or organization name:       DRMS         OURLY EQUIPMENT COST         Basic Machine:       Cat D8T - 8SU         Horsepower:       310         Blade Type:       Semi-Universal         Attachment:       NA         Shift Basis:       1 per day         Data Source:       (CRG)         Sat Breakdown       Willization %         Overership Cost/Hour:       \$93.62         NA       \$00         Ripper own.       \$0.00         Cost/Hour:       \$208.49         Total Field Cost/Hour:       \$208.49         Source of estimated soulin:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated soulin:       Cat Handbook         Jactor:       Cat Handbook         Materials consistency       Loose stockpile 1.2         Materials consistency       Loose stockpile 1.2         Materials consistency       Loose stockpile 1.2         Materials consistency       Loose stockpile 1.2      <	User:       ILE         Agency or organization name:       DRMS         OURLY EQUIPMENT COST         Basic Machine:       Cat D8T - 8SU         Horsepower:       310         Blade Type:       Semi-Universal         Attachment:       NA         Shif Basis:       1 per day         Data Source:       (CRG)         sate Breakdown       Willization %         Ownership Cost/Hour:       \$93.62         NA       \$00         Operating Cost/Hour:       \$73.35         Operator Cost/Hour:       \$0.00         Ripper own.       \$0.00         CostHour:       \$208.49         Total Fleet Cost/Hour:       \$41.52         NA       Source of estimated swell       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated swell       Cat Handbook         Source of estimated swell       Cat Handbook         Catt       37.8 LCY/hr         Undigued hourly       37.8 LCY/hr         Undigued hourly       37.8 LCY/hr         Undigued hourly       37.8 LCY/hr         Warrage push       0 %         gradient:       1.000 feet         Material weight:       1.600 lbs/LCY     <	Task #: J02B	State:	Colorado		Abbreviation:	None
Agency or organization name:       DEMS         OUTL POUPDENT COST         Basic Machine:       Cat D87 - 85U         Horsepower:       30         Blade Type:       Semi-Universal         Attachment:       NA         Shirf Basis:       Iper day         Data Source:       (CRG)         Stirf Basis:       Iper day         Data Source:       \$93.62         Matchment:       NA         Shirf Basis:       Iper day         Data Source:       \$93.62         Namership Cost/Hour:       \$93.62         Ripper own:       \$93.35         Ripper own:       \$0.00         Cost/Hour:       \$93.62         Namer Cost/Hour:       \$10.00         Operator Cost/Hour:       \$208.49         Total unit Cost/Hour:       \$208.49         Swell factor:       1000         Swell factor:       1000         Source of estimated swell:       Cat Handbook         Source of estimated swell:       Cat Handbook         Cottor       377.8 LCY/hr         Source of estimated swell:       377.8 LCY/hr         Source of estimated swell:       Coose stockpile 1.2         Suerge push       0%	Agency or organization name:       DRMS         OULL POULDENE COST         Basic Machine:       Cat D8T - 8SU         Horsepower:       310         Basic Machine:       Cat D8T - 8SU         Horsepower:       310         Basic Machine:       Na         Attachment:       Na         Shift Basis: <u>1 per day</u> Data Source:       CCRG)         Sate Machine:       Sins:         Operating Cost/Hour:       \$93.62         Ripper on:       \$0.00         Ripper on:       \$0.00         Cost/Hour:       \$0.00         Ripper on:       \$0.00         Cost/Hour:       \$208.49         Cotal unit Cost/Hour:       \$208.49         Cotal unit Cost/Hour:       \$208.49         Cotal If leet Cost/Hour:       \$16.99         Swell facto:       1000         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated volume:       Cat Handbook         Cat Handbook       Cat Handbook         Acres       377.8 LCY/hr         Unadjusted hourly       377.8 LCY/hr         Materials consistency       Loose stockpile 1.2         kescr		County:	Summit		Filename:	NA
OURLY EQUIPMENT COST       Basic Machine:     Cat D8T - 8SU       Horsepower     30       Blade Type:     Semi-Universal       Attachment:     NA       Shirl Basis:     1 per day       Data Source:     (CRG)       stiff Basis:     1 per day       Data Source:     (CRG)       stiff Basis:     1 per day       Ownership Cost/Hour:     \$93.62       Mainting Cost/Hour:     \$93.62       Na     \$0perating Cost/Hour:       Cost/Hour:     \$0.00       Na     \$000       Ripper own.     \$0.00       Cost/Hour:     \$208.49       Fotal Fleet Cost/Hour:     \$208.49       Fotal Fleet Cost/Hour:     \$208.49       Fotal Fleet Cost/Hour:     \$208.49       Fotal Fleet Cost/Hour:     \$208.49       Source of estimated volume:     6" over 222 acres (Rev. Feb 2019 Climax Estimate)       Source of estimated swell     Cat Handbook       actor:     Cat Handbook       Materials consistency     Loose stockpile 1.2       Unadjusted hourly     377.8 LCY/hr       moduction:     10.000 feet	OURLY EOUPMENT COST         Basic Machine:       Cat D8T - 8SU         Horsepower       310         Blade Type:       Semil-Universal         Attachment:       NA         Shirl Basis:       Iper day         Data Source:       (CRG)         Sost Breakdown: <ul> <li>Willization %</li> <li>Operating Cost/Hour:</li> <li>\$93.62</li> <li>NA</li> <li>Operating Cost/Hour:</li> <li>\$93.62</li> <li>NA</li> </ul> Operating Cost/Hour:       \$93.62       NA         Ripper own.       \$0.00       NA         Cost/Hour:       \$0.00       NA         Ripper ov. Cost/Hour:       \$208.49         Fotal unit Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$41.52         Source of estimated volume:       179.080         Swell factor:       1.000         Loose volume:       Cat Handbook         Cat Handbook       Cat Handbook         actor:       Cat Handbook         Materials consistency       Loose stockpile 1.2         Unadjusted hourly       377.8 LCY/hr         vorage push       0 %         gradient:       10.000 feet </td <td>User: JLE</td> <td></td> <td></td> <td></td> <td></td> <td></td>	User: JLE					
Basic Machine:       Cat D8T - 8SU         Horsepower:       310         Blade Type:       Semi-Universal         Attachmen:       NA         Shift Basis:       1 per day         Data Source:       (CRG)         was Birt Basis:       1 per day         Data Source:       (CRG)         was Breakdown:       1 per day         Ownership Cost/Hour:       \$93.62         Ripper own.       \$73.35         Cost/Hour:       \$0.00         Ripper own.       \$0.00         Cost/Hour:       \$0.00         Operating Cost/Hour:       \$0.00         Operator Cost/Hour:       \$208.49         Fotal unit Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$416.99         Matical Fleet Cost/Hour:       \$416.99         Attachmen:       \$3000         Loose volume:       179.080         Swell factor:       1000         Loose volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated swell       Cat Handbook         actor:       270 feet         Jadjusted hourly       377.8 L	Basic Machine:       Cat D8T - 8SU         Horsepower:       310         Blade Type:       Semi-Universal         Attachment:       NA         Shift Basis:       1 per day         Data Source:       (CRG)         Stat Breakdown:       \$93.62         Ownership Cost/Hour:       \$93.62         Ripper own.       \$73.35         Cost/Hour:       \$0.00         Ripper own.       \$0.00         Cost/Hour:       \$0.00         Operating Cost/Hour:       \$0.00         Ripper oxthour:       \$0.00         Operator Cost/Hour:       \$208.49         Fotal unit Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$208.49         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated swell       Cat Handbook         actor:       Cat Handbook         Materials consistency       Loose stockpile 1.2         Idexipation       377.8 LCY/hr         roduction:       377.8 LCY/hr         Materials consistency       Loose stockpile 1.2         Idex riper using a statistic in 1.000 feet       Material weight:         Material weight:       1.600 lbs/LCY <td>Agency or organ</td> <td>ization name: DF</td> <td>RMS</td> <td></td> <td></td> <td></td>	Agency or organ	ization name: DF	RMS			
Horsepower: $310$ Blade Type:       Semi-Universal         Attachment:       NA         Shift Basis:       1 per day         Data Source:       (CRG)         Swift Basis:       1 per day         Data Source:       (CRG)         Swift Basis:       1 per day         Data Source:       (CRG)         Swift Basis:       1 per day         Operating Cost/Hour:       \$93.62         Ripper own.       \$0.00         Cost/Hour:       \$0.00         Na       Operator Cost/Hour:         Supper op. Cost/Hour:       \$0.00         Operator Cost/Hour:       \$208.49         Fotal unit Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$416.99         ATERIAL OUANTTIES       Initial Volume:         Initial Volume:       179.080         Swell factor:       1000         Loose volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated swell       Cat Handbook         actor:	Horsepower:       310         Blade Type:       Semi-Universal         Attachmen:       NA         Shift Basis:       1 per day         Data Source:       (CRG)         was Breakdown:       Villization %         Ownership Cost/Hour:       \$93.62       NA         Operating Cost/Hour:       \$93.62       NA         Operator Cost/Hour:       \$0.00       NA         Ripper ovn.       \$0.00       0         Operator Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$208.49         Swell Factor:       1.000         Loose volume:       179.080         Swell factor:       1.000         Loose volume:       179.080 LCY         Source of estimated swell       Cat Handbook         actor:	OURLY EQUIPME	NT COST				
Horsepower:       310         Blade Type:       Semi-Universal         Attachment:       NA         Shift Basis:       1 per day         Data Source:       (CRG)         Swift Basis:       1 per day         Data Source:       (CRG)         Swift Basis:       1 per day         Data Source:       (CRG)         Swift Basis:       1 per day         Operating Cost/Hour:       \$93.62         NA       NA         Operating Cost/Hour:       \$773.35         Okort Cost/Hour:       \$0.00         Na       Na         Operator Cost/Hour:       \$0.00         Operator Cost/Hour:       \$208.49         Fotal unit Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$416.99         Attestinate Source of estimated volume:       179.080         Swell factor:       1000         Loose volume:       179.080 LCY         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated swell       Cat Handbook         actor:	Horsepower: $310$ Blade Type:       Semi-Universal         Attachmen:       NA         Shift Basis:       1 per day         Data Source:       (CRG)         was Breakdown:       Villization %         Ownership Cost/Hour:       \$93.62         Ripper own.       \$93.62         Ripper own.       \$0.00         Ripper own.       \$0.00         Cost/Hour:       \$0.00         Na       0         Operating Cost/Hour:       \$0.00         Ripper own.       \$0.00         Operating Cost/Hour:       \$208.49         Fotal unit Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$208.49         Swell factor:       1.000         Loose volume:       179.080         Swell factor:       1.000         Loose volume:       179.080 LCY         Source of estimated swell       6° over 222 acres (Rev. Feb 2019 Climax Estimate)         Cat Handbook       Cat Handbook         actor:	Basic Machine: Cat	D8T - 8SU				
Blade Type:       Semi-Universal         Attachment:       NA         Shift Basi:       I per day         Data Source:       (CRG)         sot Breakdown:       93.62         Ownership Cost/Hour:       \$93.62         NA       90         Operating Cost/Hour:       \$93.62         Na       00         Operating Cost/Hour:       \$93.62         Na       00         Ripper own.       \$0.00         Cost/Hour:       \$0.00         Operator Cost/Hour:       \$0.00         State Base       \$100         Potator Cost/Hour:       \$208.49         Fotal unit Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$41.52         Swell Factor:       1.000         Loose volume:       179.080         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated swell       Cat Handbook         actor:       Cat Handbook         Outer of estimated swell       377.8 LCY/hr         Jadjusted hourly       377.8 LCY/hr         Jonde thourly       377.8 LCY/hr         Undertails consistency       Loose stockpile 1.2         lesc	Blade Type:       Semi-Universal         Attachment:       NA         Shift Basis:       1 per day.         Data Source:       (CRG)         st Breakdown:       Villization %         Ownership Cost/Hour:       \$93.62         NA       \$73.35         Operating Cost/Hour:       \$73.35         Neipper own.       \$0.00         Cost/Hour:       \$208.49         Fotal unit Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$208.49         Swift Basis       1000         Loose volume:       179.080         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated volume:       Cat Handbook         actor:       Cat Handbook         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated volume:       250 feet         Unadjusted hourly       377.8 LCY/hr         reduction:						
Shift Basis: $1 \text{ per day}$ Data Source: $(CRG)$ Set Breakdown:       Utilization %         Ownership Cost/Hour:       \$93.62       NA         Operating Cost/Hour:       \$93.35       100         Ripper own.       \$0.00       NA         Cost/Hour:       \$\$0.00       NA         Ripper op. Cost/Hour:       \$\$0.00       0         Operator Cost/Hour:       \$\$0.00       0         Operator Cost/Hour:       \$\$208.49         Total unit Cost/Hour:       \$\$208.49         Fotal Fleet Cost/Hour:       \$\$208.49         Swell factor:       1.000         Loose volume:       179.080         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated swell       Cat Handbook         factor:       Cat Handbook         OURLY PRODUCTION       377.8 LCY/hr         Average push distance:       250 feet         Unadjusted hourly       377.8 LCY/hr         yroduction:       Loose stockpile 1.2         description:       Loose stockpile 1.2         Average push       0 %         gradient:       11.000 feet	Shift Basis:       Iper day         Data Source:       (CRG)         Set Breakdown:       Utilization %         Ownership Cost/Hour:       \$93.62       NA         Operating Cost/Hour:       \$93.35       100         Ripper own.       \$0.00       NA         Ripper op. Cost/Hour:       \$0.00       0         Operator Cost/Hour:       \$0.00       0         Operator Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$208.49         Total unit Cost/Hour:       \$208.49         Swell factor:       1000         Loose volume:       179,080         Swell factor:       1000         Cost Houre:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated swell       Cat Handbook         actor:       Cat Handbook         Materials consistency       Loose stockpile 1.2         Unadjusted hourly       377.8 LCY/hr         Yherage push       0 %         gradient:       1,000 feet         Material weight:       1,600 lbs/LCY		ni-Universal				
Data Source:       (CRG)         pat Breakdown:	Data Source:       (CRG)         ast Breakdown:				-		
bast Breakdown:       Utilization %         Ownership Cost/Hour:       \$93.62       NA         Operating Cost/Hour:       \$73.35       100         Ripper own.       \$0.00       NA         Ripper op. Cost/Hour:       \$0.00       0         Operator Cost/Hour:       \$0.00       0         Operator Cost/Hour:       \$208.49         Total unit Cost/Hour:       \$208.49         Total Unit Cost/Hour:       \$208.49         Swell factor:       1.000         Swell factor:       1.000         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated volume:       Cat Handbook         factor:       250 feet         Unadjusted hourly       377.8 LCY/hr         production:       377.8 LCY/hr         Materials consistency       Loose stockpile 1.2         description:       Loose stockpile 1.2         Average push       0 %         gradient:       11,000 feet	bast Breakdown:       Utilization %         Ownership Cost/Hour:       \$93.62       NA         Operating Cost/Hour:       \$773.35       100         Ripper own.       \$0.00       NA         Cost/Hour:       \$0.00       NA         Ripper oy. Cost/Hour:       \$0.00       0         Operating Cost/Hour:       \$0.00       0         Operator Cost/Hour:       \$208.49         Total Fleet Cost/Hour:       \$41.52       NA         Total Fleet Cost/Hour:       \$41.699         IATERIAL QUANTITIES         Initial Volume:       179,080         Swell factor:       1.000         Loose volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated volume:       Cat Handbook         factor:       Cat Handbook         Materials consistency       Loose stockpile 1.2         Materials consistency       Loose stockpile 1.2         description:       0 %         Materials ei altitude:       11,000 feet         Material weight:       1,600 lbs/LCY						
Utilization % NAOwnership Cost/Hour:\$93.62NAOperating Cost/Hour:\$73.35100Ripper own. Cost/Hour:\$0.00NARipper op. Cost/Hour:\$0.000Operator Cost/Hour:\$208.49Fotal Init Cost/Hour:\$208.49Fotal Fleet Cost/Hour:\$41.52NAATERIAL QUANTITIESInitial Volume:179.080Swell factor:1.000Loose volume:6" over 222 acres (Rev. Feb 2019 Climax Estimate)Source of estimated volume:6" over 222 acres (Rev. Feb 2019 Climax Estimate)Source of estimated swellCat Handbookactor:250 feetJadjusted hourly377.8 LCY/hrproduction:250 feetUnditisted hourly377.8 LCY/hrwerage push distance:250 feetJadjusted hourly377.8 LCY/hrwerage push0 %radient:11,000 feet	Ownership Cost/Hour:       \$93.62       NA         Operating Cost/Hour:       \$73.35       100         Ripper own.       \$0.00       NA         Cost/Hour:       \$0.00       NA         Ripper op. Cost/Hour:       \$0.00       NA         Ripper op. Cost/Hour:       \$0.00       0         Operator Cost/Hour:       \$208.49         Fotal Init Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$416.99         ATERIAL QUANTITIES         Initial Volume:       179,080         Swell factor:       1.000         Loose volume:       179,080 LCY         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated swell       Cat Handbook         actor:	Data Source: (CR	CG)				
Ownership Cost/Hour: $$93.62$ NA         Operating Cost/Hour: $$73.35$ 100         Ripper own. $$0.00$ NA         Ripper op. Cost/Hour: $$0.00$ 0         Operator Cost/Hour: $$0.00$ 0         Operator Cost/Hour: $$0.00$ 0         Operator Cost/Hour: $$208.49$ Fotal unit Cost/Hour: $$208.49$ Fotal Fleet Cost/Hour: $$416.99$ Initial Volume:       179,080         Swell factor:       1.000         Loose volume:       179,080 LCY         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Cat Handbook       Cat Handbook         actor:       Cat Handbook         Materials consistency       Loose stockpile 1.2         Materials consistency       Loose stockpile 1.2         Hescription:       0 %         Average push altitude:       0 %         gradient:       11,000 feet	Ownership Cost/Hour: $$93.62$ $\overline{NA}$ Operating Cost/Hour: $$73.35$ $100$ Ripper own. $$0.00$ $NA$ Ripper op. Cost/Hour: $$0.00$ $0$ Operator Cost/Hour: $$208.49$ Fotal unit Cost/Hour: $$208.49$ Fotal Fleet Cost/Hour: $$208.49$ State Fleet Cost/Hour: $$208.49$ Source of estimated volume: $19,080$ Loose volume: $179,080$ Source of estimated volume: $6^{\circ}$ over 222 acres (Rev. Feb 2019 Climax Estimate)Source of estimated volume: $6^{\circ}$ over 222 acres (Rev. Feb 2019 Climax Estimate)Source of estimated volume: $6^{\circ}$ over 222 acres (Rev. Feb 2019 Climax Estimate)Source of estimated swellCat HandbookSource of estimated swell $250$ feetUnadjusted hourly $377.8$ LCY/hrproduction: $250$ feetUnadjusted hourly $377.8$ LCY/hrproduction: $0 \%$ Materials consistencyLoose stockpile 1.2description: $11,000$ feetMaterial weight: $1,600$ lbs/LCY	ost Breakdown:					
Operating Cost/Hour: $\$73.35$ 100         Ripper own. $\$0.00$ NA         Ripper op. Cost/Hour: $\$0.00$ 0         Operator Cost/Hour: $\$0.00$ 0         Operator Cost/Hour: $\$208.49$ Total unit Cost/Hour: $\$208.49$ Total Fleet Cost/Hour: $\$208.49$ Total Fleet Cost/Hour: $\$208.49$ Swell factor:       1.000         Loose volume:       179,080         Swell factor:       1.000         Loose volume:       179,080 LCY         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Cat Handbook       Cat Handbook         factor:       Cat Handbook         OURLY PRODUCTION       Average push distance:         Average push distance:       250 feet         Unadjusted hourly       377.8 LCY/hr         production:       Materials consistency         Loose stockpile 1.2       Loose stockpile 1.2         Average push       0 %         gradient:       Na         Average site altitude:       11,000 feet	Operating Cost/Hour: $\$73.35$ 100         Ripper ovn. $\$0.00$ NA         Ripper op. Cost/Hour: $\$0.00$ 0         Operator Cost/Hour: $\$0.00$ 0         Total unit Cost/Hour: $\$0.00$ 0         Total unit Cost/Hour: $\$208.49$ $\$41.52$ NA         Total Fleet Cost/Hour: $\$208.49$ $\$41.52$ NA         Total Fleet Cost/Hour: $\$416.99$ $\$41.52$ NA         IATERIAL QUANTITIES         Initial Volume:       179,080 $LCY$ Swell factor:       1.000			<b>A C -</b>			
Ripper own. Cost/Hour:       \$0.00       NA         Ripper op. Cost/Hour:       \$0.00       0         Operator Cost/Hour:       \$41.52       NA         Total unit Cost/Hour:       \$208.49         Total Unit Cost/Hour:       \$208.49         Total Fleet Cost/Hour:       \$416.99         Initial Volume:       179.080         Swell factor:       1.000         Loose volume:       179,080 LCY         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated swell       Cat Handbook         factor:	Ripper own. Cost/Hour:       \$0.00       NA         Ripper op. Cost/Hour:       \$0.00       0         Operator Cost/Hour:       \$208.49         Total unit Cost/Hour:       \$208.49         Total Cost/Hour:       \$41.52       NA         Initial Volume:       179,080         Swell factor:       1.000         Loose volume:       179,080 LCY         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated volume:       Cat Handbook         factor:       Cat Handbook         OURLY PRODUCTION       377.8 LCY/hr         Average push distance:       250 feet         Unadjusted hourly       377.8 LCY/hr         production:       0 %         gradient:       Loose stockpile 1.2         Average push       0 %         gradient:       1,600 lbs/LCY         Material weight:       1,600 lbs/LCY						
Cost/Hour:       30.00       NA         Ripper op. Cost/Hour:       \$0.00       0         Operator Cost/Hour:       \$208.49         Fotal unit Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$41.52       NA         Fotal unit Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$416.99         LATERIAL QUANTITIES         Initial Volume:       179,080         Swell factor:       1.000         Loose volume:       179,080 LCY         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated swell       Cat Handbook         factor:	Cost/Hour:       30.00       NA         Ripper op. Cost/Hour:       \$0.00       0         Operator Cost/Hour:       \$208.49         Total unit Cost/Hour:       \$208.49         Total Fleet Cost/Hour:       \$416.99         ATERIAL QUANTITIES         Initial Volume:       179,080         Swell factor:       1.000         Loose volume:       179,080 LCY         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated swell       Cat Handbook         Source of estimated swell       Cat Handbook         Source of estimated swell       250 feet         Unadjusted hourly       377.8 LCY/hr         production:       250 feet         Unadjusted hourly       377.8 LCY/hr         production:			\$73.35	100		
Ripper op. Cost/Hour:       \$0.00       0         Operator Cost/Hour:       \$41.52       NA         Fotal unit Cost/Hour:       \$208.49         Fotal Init Cost/Hour:       \$416.99         Total Fleet Cost/Hour:       \$416.99         Initial Volume:       179,080         Swell factor:       1.000         Loose volume:       179,080 LCY         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Cat Handbook       Cat Handbook         Source of estimated swell       Cat Handbook         Cat V PRODUCTION       377.8 LCY/hr         Average push distance:       250 feet         Unadjusted hourly       377.8 LCY/hr         production:       Loose stockpile 1.2         Average push       0 %         gradient:       0 %         Average site altitude:       11,000 feet	Ripper op. Cost/Hour:       \$0.00       0         Operator Cost/Hour:       \$208.49         Fotal Init Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$416.99         Initial Volume:       179.080         Swell factor:       1.000         Loose volume:       179.080 LCY         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated swell       Cat Handbook         Gurte of estimated swell       Cat Handbook         Varage push distance:       250 feet         Unadjusted hourly       377.8 LCY/hr         yroduction:       Loose stockpile 1.2         Materials consistency       Loose stockpile 1.2         description:       0 %         Average push       0 %         gradient:       11,000 feet         Material weight:       1,600 lbs/LCY			\$0.00	NA		
Operator Cost/Hour:       \$41.52       NA         Fotal unit Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$416.99         Initial Volume:       179,080         Swell factor:       1.000         Loose volume:       179,080 LCY         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Cat Handbook       Cat Handbook         Factor:       250 feet         Unadjusted hourly       377.8 LCY/hr         production:       Loose stockpile 1.2         Materials consistency       Loose stockpile 1.2         Average push gradient:       0 %         Average site altitude:       11,000 feet	Operator Cost/Hour:       \$208.49         Fotal unit Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$416.99         Initial Volume:       179.080         Swell factor:       1.000         Loose volume:       179,080 LCY         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated swell       Cat Handbook         Source of estimated swell       Cat Handbook         Yeage push distance:       250 feet         Unadjusted hourly       377.8 LCY/hr         production:       Loose stockpile 1.2         Materials consistency       Loose stockpile 1.2         Average push       0 %         gradient:       11,000 feet         Material weight:       1,600 lbs/LCY			\$0.00	0		
Total unit Cost/Hour:       \$208.49         Total Fleet Cost/Hour:       \$416.99         Initial Volume:       179,080         Swell factor:       1.000         Loose volume:       179,080 LCY         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Cat Handbook       Cat Handbook         Source of estimated swell       Cat Handbook         factor:       250 feet         Unadjusted hourly       377.8 LCY/hr         production:       Loose stockpile 1.2         Materials consistency       Loose stockpile 1.2         Average push       0 %         gradient:       11,000 feet	Total unit Cost/Hour:       \$208.49         Fotal Fleet Cost/Hour:       \$416.99         IATERIAL QUANTITIES         Initial Volume:       179,080         Swell factor:       1.000         Loose volume:       179,080 LCY         Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated swell       Cat Handbook         factor:       Cat Handbook         Source of estimated swell       250 feet         OURLY PRODUCTION       377.8 LCY/hr         Average push distance:       250 feet         Unadjusted hourly       377.8 LCY/hr         production:       Loose stockpile 1.2         Materials consistency       Loose stockpile 1.2         Average push       0 %         gradient:       11,000 feet         Material weight:       1,600 lbs/LCY						
Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated swell       Cat Handbook         Factor:       Cat Handbook         OURLY PRODUCTION       Average push distance:         Average push distance:       250 feet         Unadjusted hourly       377.8 LCY/hr         production:       Loose stockpile 1.2         Materials consistency       Loose stockpile 1.2         Average push       0 %         gradient:       11,000 feet	Source of estimated volume:       6" over 222 acres (Rev. Feb 2019 Climax Estimate)         Source of estimated swell       Cat Handbook         Cat Handbook       Cat Handbook         OURLY PRODUCTION       Average push distance:         Average push distance:       250 feet         Unadjusted hourly       377.8 LCY/hr         production:       Loose stockpile 1.2         Materials consistency       Loose stockpile 1.2         Average push       0 %         gradient:       11,000 feet         Material weight:       1,600 lbs/LCY	Initial Volume: 179, Swell factor: 1.000	080 0	_			
Source of estimated swell factor:       Cat Handbook         COURLY PRODUCTION       Cat Handbook         Average push distance:       250 feet         Unadjusted hourly production:       377.8 LCY/hr         Materials consistency description:       Loose stockpile 1.2         Average push gradient:       0 %         Average site altitude:       11,000 feet	Source of estimated swell factor:       Cat Handbook         GURLY PRODUCTION						
Average push distance:       250 feet         Unadjusted hourly       377.8 LCY/hr         production:       Loose stockpile 1.2         Materials consistency       Loose stockpile 1.2         description:       0 %         gradient:       11,000 feet	Average push distance:       250 feet         Unadjusted hourly       377.8 LCY/hr         production:       Loose stockpile 1.2         Materials consistency       Loose stockpile 1.2         description:       0 %         gradient:       11,000 feet         Material weight:       1,600 lbs/LCY	Source of estimated swel	me: <u>6" over 2</u> 11 Cat Hand		7. Feb 2019 Climax Es	timate)	
Average push distance:       250 feet         Unadjusted hourly       377.8 LCY/hr         production:       Loose stockpile 1.2         Materials consistency       Loose stockpile 1.2         description:       0 %         Average push       0 %         gradient:       11,000 feet	Average push distance:       250 feet         Unadjusted hourly       377.8 LCY/hr         production:       Loose stockpile 1.2         Materials consistency       Loose stockpile 1.2         description:       0 %         gradient:       11,000 feet         Material weight:       1,600 lbs/LCY	OURLY PRODUCT	ION				
Unadjusted hourly       377.8 LCY/hr         production:       377.8 LCY/hr         Materials consistency       Loose stockpile 1.2         description:       0 %         gradient:       11,000 feet	Unadjusted hourly       377.8 LCY/hr         production:       377.8 LCY/hr         Materials consistency       Loose stockpile 1.2         description:       0 %         gradient:       11,000 feet         Average site altitude:       11,000 feet         Material weight:       1,600 lbs/LCY						
description:	description:	Average push distance: Unadjusted hourly production:		/hr			
gradient: Average site altitude: 11,000 feet	gradient:		Loose	stockpile 1.2			
Average site altitude: 11,000 feet	Average site altitude:11,000 feetMaterial weight:1,600 lbs/LCY		0 %				
Material weight: 1,600 lbs/LCY		Average site altitude:	11,000 feet				
	Weight description: Top Soil	Material weight	1.600 lbs/LCY				

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8593

Adjusted unit production:	324.64 LCY/hr
Adjusted fleet production:	649.28 LCY/hr

Fleet size:	2 Dozer(s)
Unit cost:	\$0.642/LCY

Total job time:	275.81 Hours
Total job cost:	\$115,011

Task description:	Mayflower TSF, F		DER WOR le the Top Su			
e: Climax Mine	Perm	it Action:	March 2019		Permit/Job#:	M1977493
PROJECT IDENTIFI	ICATION					
Task #: J03		Colorado		Abbr	eviation: No	one
Date: $3/15/2019$		Summit			ilename: NA	
User: JLE						
Agency or organ	nization name: DRM	S				
HOURLY EQUIPME	<u>ENT COST</u>					
Basic Machine	e: CAT 12M			Horsepower:	158	
Ripper Attachmen	t:		_	Shift Basis:	1 per da	ay
				Data Source:	(CRG	)
Cost Breakdown:						
			*** <b>*</b> *	Utilization %		
	ership Cost/Hour:		\$30.73	<u>NA</u>		
	ating Cost/Hour:		\$30.60 \$0.00	100 NA		
	ating Cost/Hour:		\$0.00			
	erator Cost/Hour:		\$28.69	NA		
1	Unit Cost/Hour:		\$90.02			
Total	Fleet Cost/Hour:	\$180.	04			
		+				
MATERIAL QUANT						
	to be graded or ripped:	222.00			acı	res
Source	e of estimated acreage:	Climax				
HOURLY PRODUCT	<u> TION</u>					
	Average Grader Speed	1:	1.50	mph		
	Selected Application			grading (0-2.5 m	ph) - 1.5	
	Selected Blade Angle		0	degrees		
	Effective Blade Length			-		
Width	of blada avanlan nan naa		12.00	feet		
	of blade overlap per pass	5:	2.00	feet feet		
Net grading of	or ripping width per pas	s:	2.00 10.00	feet feet feet	ur	
Net grading o Unadjusted	or ripping width per pass Hourly Unit Production	s:	2.00 10.00 1.8182	feet feet feet acres/ho		
Net grading of	or ripping width per pass Hourly Unit Production	s: s: 1:	2.00 10.00 1.8182	feet feet feet		
Net grading o Unadjusted Job Condition Correction	or ripping width per pass Hourly Unit Production	s:	2.00 10.00 1.8182 S	feet feet feet acres/ho		
Net grading o Unadjusted	or ripping width per pass Hourly Unit Production <u>Factors</u> 0.95	s: s: n: Source	2.00 10.00 1.8182 S	feet feet feet acres/ho		
Net grading o Unadjusted Job Condition Correction Altitude Adj:	or ripping width per pass Hourly Unit Production Factors 0.95 0.90	s: s: n: Source (CAT HB)	2.00 10.00 1.8182 S	feet feet feet acres/ho		
Net grading o Unadjusted Job Condition Correction Altitude Adj: Job Efficiency: Net Correction:	or ripping width per pass       Hourly Unit Production       Factors       0.95       0.90       0.8550	Source (CAT HB) (1sh/d, fav, multiplier	2.00 10.00 1.8182 S	feet feet feet acres/ho ite Altitude: <u>1100</u>		
Net grading o Unadjusted Job Condition Correction Altitude Adj: Job Efficiency: Net Correction:	or ripping width per pass Hourly Unit Production Factors 0.95 0.90	Source (CAT HB (1sh/d, fav multiplier duction:	2.00 10.00 1.8182 S	feet feet feet acres/ho		
Net grading o Unadjusted Job Condition Correction Altitude Adj: Job Efficiency: Net Correction:	or ripping width per pass Hourly Unit Production <u>Factors</u> 0.95 0.90 0.8550 djusted Hourly Unit Pro	Source (CAT HB (1sh/d, fav multiplier duction:	2.00 10.00 1.8182 S	feet feet feet acres/ho ite Altitude: <u>1100</u>		
Net grading o Unadjusted Job Condition Correction Altitude Adj: Job Efficiency: Net Correction:	or ripping width per past Hourly Unit Production Factors 0.95 0.90 0.8550 djusted Hourly Unit Pro ljusted Hourly Fleet Pro	Source (CAT HB (1sh/d, fav multiplier duction:	2.00 10.00 1.8182 S	feet feet feet acres/ho ite Altitude: <u>1100</u>		
Net grading of Unadjusted Job Condition Correction Altitude Adj: Job Efficiency: Net Correction: Ad Ad JOB TIME AND COS	or ripping width per past Hourly Unit Production Factors 0.95 0.90 0.8550 djusted Hourly Unit Pro ljusted Hourly Fleet Pro	s: s: Source (CAT HB (1sh/d, fav) multiplier duction: duction:	2.00 10.00 1.8182 S	feet feet feet acres/hou ite Altitude: <u>1100</u> acres/Hour acres/Hour	<u>)0</u> feet	ours

Postmining Channel Construction	on				Task No.	K01					
									XX	Variable	
Date :	21-Mar-19	Permit	M1977493	Site:	Climax Mi	ne			XX	Formula	
User:	JLE			State : Colorado			County:	Lake/Summit			
Agency Name: Colorado Divisio	on of Reclam	ation, Mi	ning and Sa	afety					XX	Climax Estir	nate
Permit Action:	March 201	9			Task Desc	cription: East Side	e Channel Co	onstruction			
			Width		Width	Excavated	Excavated	Riprap Thickness	Perimeter,	Area for Geotextile (excl. anchor	
Channel ID	Length	Depth	(bottom)	Side Slopes	( <b>Top</b> )	Vol./LF	Vol. (total)	(2xD50)	P	trenches)	Riprap Vol.
	(ft)	(ft)	(ft)	(XH:1V)	(ft)	(CY)	(CY)	(ft)	(ft)	(SY)	(CY)
MF Pond Spillway to SD Crest	5,684	6.0	6.0	2.0	30.0	4.0000	22,736	** Climax	32.83	27,051	#VALUE!
Tenmile Extensoin	5,000	6.0	6.0	2.0	30.0	4.0000	20,000	**Climax	32.83	26,018	#VALUE!
Mayflower Extension	11,400	6.0	16.0	2.0	40.0	6.2222	70,933	**Climax	42.83	66,922	#VALUE!
T- 4 - 1-	22.094				0.0	0.0000	0		0.00	0	
Totals	22,084	-					113,669			119,991	#VALUE!
Materials Needed:		Geotexti		119,991		**Riprap (CY):		74,809		Excavation (CY):	113,669
Water fais freeded.		Geotexi	le (31).	119,991		Kipiap (C1).		74,009		(01).	115,007
Material Costs:		Geot	extile (SY):	\$ 0.94		***	Riprap (CY):	\$ 32.08	Exca	vation (CY):	\$ -
Labor Cost:				\$ 0.26			<b>F F ( = )</b>	***		(- )	\$ 2.40
Equipment Cost:				\$ -				***			\$ 1.39
Means Reference		33 32 1	916 1500			31 37 1310 0100	)		31 23 16	42 0310	
Totals:		Geotexti	le (\$):	\$ 143,989.20		Riprap (\$):		\$ 2,399,872.72	Excavation (	CY):	\$ 430,806.77
Hours:		Geotexti	le (Hrs):	384.0	)	Riprap (Hrs):		9,652.8	Excavation (	Hrs):	2,841.73
		SY/HR	312.5			CY/HR	7.750		CY/HR	40.00	
Total Post-Mining Chanr				12,878.48	_						
Total Post-Mining Chan	nei Reconstr	uction Co	ost:	\$ 2,974,668.69							
** Quantity of Geotextile and Ri *** Rip-Rap Purchase and Place											

# **DEMOLITION WORK**

Climax Mi	limax Mine		Permit Action: March 2019		Permit/.	Permit/Job#: <u>M1977493</u>	
PROJECT	' IDENT	<b>IFICATION</b>					
Task 1 #:	K02	S	tate: Colorado		Abbrevia	tion: Non	e
	3/15/2019	9 Cou	unty: Summit		Filen	ame: NA	
<b>T</b> T	иг		~				
Age	•	rganization nan	ne: DRMS			Looot	ion adjustment.
	ency or o	rganization nan	ne: DRMS			Locat	ion adjustment:
Ago J <b>NIT COST</b>	ency or o <u>FS</u> re or	rganization nan Dimensions	ne: DRMS Demolition Men Selection	u Quantity	Unit	Locat Unit Cost	ion adjustment: Total Cost
Ago J <u>NIT COST</u> 00.00 % Structur	ency or o <u>FS</u> re or		Demolition Men	Quantity		Unit	

				Total Cost	
		Subtotal		(adjusted for	
Job Hours:	489.41	(unadjusted):	\$1,842,048.00	location):	\$1,842,048.00

## BULLDOZER WORK

Climax Mine	Pe	rmit Action:	March 2019	Permit/Job	o#: <u>M1977493</u>
ROJECT IDENTIFI	CATION				
Task #: <u>L01</u>	State:	Colorado		Abbreviation:	None
Date: <u>3/15/2019</u> User: JLE	County:	Summit		Filename:	NA
Agency or organi	ization name: DF	RMS			
IOURLY EQUIPMEN	NT COST				
	D8T - 8SU				
Horsepower: 310					
1	ni-Universal				
Attachment: 3-sh	nank ripper				
Shift Basis: 1 pe	er day				
Data Source: (CR	2G)				
Cost Breakdown:					
<u> </u>			Utilization %		
Ownership Cost/Hour:		\$93.62	NA		
Operating Cost/Hour:		\$73.35	100		
Ripper own. Cost/Hour:		\$8.93	NA		
Ripper op. Cost/Hour:		\$1.95	25		
Operator Cost/Hour:		\$41.52	NA		
MATERIAL QUANTI         Initial Volume:       33,87         Swell factor:       1.000         Loose volume:       33,87	73	_			
		_			
Source of estimated volu Source of estimated swel factor:		lbook			
HOURLY PRODUCT	ION				
Average push distance: Unadjusted hourly production:	250 feet 377.8 LCY	/hr			
Materials consistency description:	Compa	cted fill or en	nbankment 0.9		
Average push gradient:	0 %				
Average site altitude:	11,000 feet				
Material weight:	2,550 lbs/LCY				
Weight description:	Earth - Dry packe	d			
	J m				

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.100	(50% SL)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4447

Adjusted unit production:	168.01 LCY/hr
Adjusted fleet production:	<b>336.02</b> LCY/hr

Fleet size:	2 Dozer(s)
Unit cost:	\$1.306/LCY

Total job time:	100.81 Hours
Total job cost:	\$44,227

Climax Mine, M-1977-493

March 2019, DRMS Cost Estimate

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# TRUCK/LOADER TEAM WORK

Task description:	Maynov	wer Acid, Load	una maai Subsoi				;
Site: Climax Mine		Permit Ac	tion: March 201	19	Permit/Job	o#: _]	M1977493
PROJECT IDENT	<b>TIFICATION</b>						
Task #: L02A	State: Colorado				previation:	None	
Date: $3/15/2$ User: JLE	e: 3/15/2019 County: Summit H					NA	
Agency or o	organization nam	ne: DRMS					
HOURLY EQUIP	MENT COST	-		Shift ba	sis: <u>1 per da</u>	<u>y</u>	
			Equipment Descr	iption			
Tr	uck Loader Tear		t 740				
Suppo	rt Equipment -Lo		T 950H t D6T XL				
Suppor	1 1	mp Area: NA					
Road Mai	intenance – Moto	or Grader: CA	T 12M				
Road Ma			T 12M ater Tanker, 5,000	Gal.			
	-Wat	ter Truck: Wa	ter Tanker, 5,000		Mai	ntonor	
Road Mai		ter Truck: Wa	ter Tanker, 5,000	Gal. Equipment Dump Area	Motor	ntenar	nce Equipment Water Truck
<u>Cost Breakdown</u> :	-Wat Truck/Loa	ter Truck: Wa	ter Tanker, 5,000 Support	Equipment	Motor Grader	ntenar	
Cost Breakdown:	-Wat <u>Truck/Loa</u> Truck	ter Truck: Wa der Team Loader	tter Tanker, 5,000 Support Load Area	Equipment Dump Area	Motor Grader	100	Water Truck
Cost Breakdown:	-Wat Truck/Loa Truck 100	ter Truck: Wa der Team Loader 100	tter Tanker, 5,000 Support Load Area 100	Equipment Dump Area NA	Motor Grader	100	Water Truck
Cost Breakdown:	-Wat Truck/Loa Truck 100 \$66.13	ter Truck: Wa der Team Loader 100 \$26.14	ter Tanker, 5,000 Support Load Area 100 \$52.66	Equipment Dump Area NA NA	Motor Grader \$30 \$30	100	Water Truck 100 \$25.30
Cost Breakdown: 6 Utilization-machine: 0 wnership cost/hour: 0 perating cost/hour:	-Wat Truck/Loa Truck 100 \$66.13 \$55.75	ter Truck: Wa der Team Loader 100 \$26.14 \$30.84	tter Tanker, 5,000 Support Load Area 100 \$52.66 \$46.34	Equipment Dump Area NA NA NA	Motor Grader \$30 \$30	100 0.73 0.60	Water Truck 100 \$25.30 \$36.60
Cost Breakdown: 6 Utilization-machine: 0 wnership cost/hour: 0 perating cost/hour: % Utilization-riper: Ripper own.	-Wat Truck/Loa Truck 100 \$66.13 \$55.75 NA	ter Truck: Wa der Team Loader 100 \$26.14 \$30.84 0	tter Tanker, 5,000 Support Load Area 100 \$52.66 \$46.34 NA	Equipment Dump Area NA NA NA NA	Motor Grader \$30 \$30 \$30 \$30 \$30	100 0.73 0.60 NA	Water Truck 100 \$25.30 \$36.60 NA
Cost Breakdown: 6 Utilization-machine: 0 wnership cost/hour: 0 perating cost/hour: % Utilization-riper: Ripper own. cost/hour:	-Wat Truck/Loa Truck 100 \$66.13 \$55.75 NA NA	ter Truck: Wa der Team Loader 100 \$26.14 \$30.84 0 \$0.00	tter Tanker, 5,000 Support Load Area 100 \$52.66 \$46.34 NA \$0.00	Equipment Dump Area NA NA NA NA NA	Motor Grader \$30 \$30 \$30 \$30 \$30	100 0.73 0.60 NA 0.00	Water Truck 100 \$25.30 \$36.60 NA \$0.00
Cost Breakdown: 6 Utilization-machine: Ownership cost/hour: Operating cost/hour: % Utilization-riper: Ripper own. cost/hour: Ripper op. cost/hour:	-Wat Truck/Loa Truck 100 \$66.13 \$55.75 NA NA NA	ter Truck: Wa der Team Loader 100 \$26.14 \$30.84 0 \$0.00 \$0.00	tter Tanker, 5,000 Support Load Area 100 \$52.66 \$46.34 NA \$0.00 \$0.00	Equipment Dump Area NA NA NA NA NA	Motor Grader \$30 \$30 \$30 \$30 \$30 \$30 \$30 \$30 \$30 \$30	100 0.73 0.60 NA 0.00 0.00 0.69	Water Truck 100 \$25.30 \$36.60 NA \$0.00 \$0.00
Cost Breakdown: 6 Utilization-machine: Ownership cost/hour: Operating cost/hour: % Utilization-riper: Ripper own. cost/hour: Ripper op. cost/hour: Operator cost/hour:	Wat Truck/Loa Truck 100 \$66.13 \$55.75 NA NA NA NA \$31.17	ter Truck: Wa der Team Loader 100 \$26.14 \$30.84 0 \$0.00 \$0.00 \$0.00	tter Tanker, 5,000 Support Load Area 100 \$52.66 \$46.34 NA \$0.00 \$0.00 \$41.52	Equipment Dump Area NA NA NA NA NA NA	Motor Grader \$30 \$30 \$30 \$30 \$30 \$30 \$30 \$30 \$30 \$30	100 0.73 0.60 NA 0.00 0.00 0.69	Water Truck 100 \$25.30 \$36.60 NA \$0.00 \$0.00 \$21.23

## **MATERIAL QUANTITIES**

Initial volume: Loose volume:	605 605	CCY LCY	Swell factor:	1.000	
	of estimated volume:		,		
Source of e	stimated swell factor:	Cat Handbo	ok		
Μ	aterial Purchase Cost:	\$0.00			
	Total Cost:	\$0.00			
Truck Capacity:	•				
------------------------------------------------	--------------------------------------	-----------------------	--------------------	------------------	----------------------
Truck Payload (weight) Bas Material weight:		D	о/I CV		
e	2,650	Pound			
Description:	-	ock - 25% Rock, 759			
Rated Payload:	87,000	Pound	S		
Payload Capacity:	32.83	LCY			
Truck Bed (volume) Basis:					
Struck Volume:		LCY			
Heaped Volume:		LCY			
Average Volume:		LCY			
Adjusted Volume:	31.40	LCY			
Final	Truck Volume B	ased on Number of I	Loader Passes	31.61	LCY
Loading Tool Capacity	Truck volume D		Louder 1 usses.	51.01	
<u>Louding 1001 Cupacity</u>			Buck	et Size Class: N	A
Rated Capacity:	4.300	LCY (heaped)	Ducr		
Bucket Fill Factor:	1.050	Other - moist lo	am (100-	-110%) 1.050	
Adjusted Capacity:	4.515	LCY	, `		
Job Condition Correction	<b>.</b>	Sit	te Altitude (ft.):	10400 feet	
Job Condition Corrections					
	Truck	Loader	Source		
Altitude Adj:	0.600	1.000	(CAT HE		
Job Efficiency:	0.830	0.830	(CAT HE	3)	
Net Correction:	0.498	0.830			
Loading Tool Cycle Time	<u>:</u> N	umber of Loading T	ool Passes Requ	uired to Fill	7 passes
Excavators and Front Shov	_	C		Truck:	7 pusses
Machine Cycle Time		Rating: NA			
	within this Basic				
Track Loaders -	<ul> <li>Material Descrip</li> </ul>	otion:			
Cycle Time Elements (min.	):				
Load: NA	Ma	aneuver: NA		Dump: 0.100	)
Wheel and Tra	ck Loaders - Una	ljusted Basic Loader	r Cycle Time (la	and dump	500 minutes
wheel and Tra	.K Loaders - Onac	ijusted Dasie Loadel	•	naneuver): 0	.500
Cycle Time Factors				Factor (min.)	Source
Material				0.020	(Cat HB)
Stockpile				0.020	(Cat HB)
Truck Ownership	Common owr 0.04	nership of trucks and	loaders -	-0.040	(Cat HB)
Operation		ration $-0.04$		-0.040	(Cat HB)
Dump Target	^			0.000	(Cat HB) (Cat HB)
		Net Cycle Time	Adjustment.	-0.040	minutes
		Adjusted Loade		0.460	minutes
			me per Truck:	2.860	minutes
		THE LOAU TH	ne per riuer.	2.000	minutes

#### Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	1.000	Minutes
Truck Load Time:	2.860	Minutes	Adjusted for site altitude:	2.860	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.667	Minutes

maintained 3.0

Truck Travel (Haul & Return) Time: Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1656.00	4.00	3.00	7.00	1281	1.447
2	2568.00	-8.00	3.00	-5.00	2721	1.013

Return Route:

Haul Time: **2.460** minutes

DU	mmuu

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2568.00	8.00	3.00	11.00	1610	1.681
2	1656.00	-4.00	3.00	-1.00	3706	0.490

Return Time:	2.171	minutes
Total Truck Cycle Time:	10.158	minutes

Loading Tool unit	401 27	L CV/II	A dimeted for ish	CC: .:	407 75	L CV/II.
Production Truck Unit Production	491.27	LCY/Hour	Adjusted for job e	inciency:	407.75	LCY/Hour
Truck Unit Production	186.69	LCY/Hour	Adjusted for job e	fficiency:	154.95	_ LCY/Hour
Optimal No. of Trucks:	3	Truck(s)	Selected Number of	of Trucks:	3	Truck(s)
		Adjusted hou	rly truck team production:	464.85	LCY/H	our
	А	•	ck/loader team production:	407.75	LCY/H	our
	Adjı	usted multiple true	ck/loader team production:	407.75	LCY/H	our

Fleet size:	1	Team(s)	Total job time:	1.48	Hours
Unit cost:	\$2.135	/LCY	Total job cost:	\$1,292	

Climax Mine, M-1977-493

# TRUCK/LOADER TEAM WORK

Task description:	Mayflov							
Site: Climax Mine		Permit	t Actio	on: March 201	9	Permit/Job	o#: _	M1977493
PROJECT IDENT	<b>TIFICATION</b>							
Task #: L02B		State: C	olorad	lo	Abb	previation:	Nor	ne
Date: 3/15/2	2019 C	County: Su	ummit	t		Filename:	NA	
User: JLE								
Agency or o	organization nam	ne: DRMS	S					
HOURLY EQUIP	MENT COST				Shift ba	sis: <u>1 per da</u>	V	
		-	Ec	quipment Descri	iption	-	•	
Tr	uck Loader Tear		Cat 7	40	1			
			CAT					
Suppor	rt Equipment -Lo		Cat D NA	06T XL				
	-Du	mp Area:	INA					
Road Mai	intenance –Moto			12M				
Road Mai	intenance –Moto -Wat	or Grader:	CAT		Gal.			
Road Mar			CAT	12M r Tanker, 5,000	Gal.			
Road Mai	-Wat	or Grader:	CAT Water	r Tanker, 5,000 Support	Equipment		ntena	nce Equipment
	-Wat	or Grader:	CAT Water	r Tanker, 5,000		Mai Motor Grader	ntena	nce Equipment Water Truck
	-Wat	der Team Loader	CAT Water	r Tanker, 5,000 Support	Equipment	Motor Grader	ntena 100	
<u>Cost Breakdown</u> :	-Wat Truck/Loa Truck	der Team Loader	CAT Water	r Tanker, 5,000 Support Load Area	Equipment Dump Area	Motor Grader	100	Water Truck
Cost Breakdown:	-Wat Truck/Loa Truck 100	or Grader: eer Truck: der Team Loader 1	CAT Water	r Tanker, 5,000 Support Load Area 100	Equipment Dump Area NA	Motor Grader	100	Water Truck
Cost Breakdown:	-Wat Truck/Loa Truck 100 \$66.13	or Grader: er Truck: der Team Loader 1 \$26	CAT Water	r Tanker, 5,000 Support Load Area 100 \$52.66	Equipment Dump Area NA NA	Motor Grader \$30 \$30	100	Water Truck 100 \$25.30
Cost Breakdown: Outilization-machine: Ownership cost/hour: Operating cost/hour:	-Wat Truck/Loa Truck 100 \$66.13 \$55.75	or Grader: er Truck: der Team Loader 1 \$26 \$30	CAT Water 100 5.14 9.84	r Tanker, 5,000 Support Load Area 100 \$52.66 \$46.34	Equipment Dump Area NA NA NA	Motor Grader	100 0.73 0.60	Water Truck 100 \$25.30 \$36.60
Cost Breakdown: Utilization-machine: Ownership cost/hour: Operating cost/hour: %Utilization-riper: Ripper own. cost/hour:	-Wat Truck/Loa Truck 100 \$66.13 \$55.75 NA	or Grader: er Truck: der Team Loader 1 \$26 \$30 \$30	CAT Water 100 5.14 0	r Tanker, 5,000 Support Load Area 100 \$52.66 \$46.34 NA	Equipment Dump Area NA NA NA NA	Motor Grader	100 0.73 0.60 NA	Water Truck 100 \$25.30 \$36.60 NA
Cost Breakdown: Utilization-machine: Ownership cost/hour: Operating cost/hour: %Utilization-riper: Ripper own. cost/hour:	-Wat Truck/Loa Truck 100 \$66.13 \$55.75 NA NA	or Grader: er Truck: der Team Loader 1 \$26 \$30 \$30	CAT Water 100 5.14 0.84 0 9.00	r Tanker, 5,000 Support Load Area 100 \$52.66 \$46.34 NA \$0.00	Equipment Dump Area NA NA NA NA NA	Motor Grader	100 0.73 0.60 NA 0.00 0.00	Water Truck 100 \$25.30 \$36.60 NA \$0.00
Cost Breakdown: OUtilization-machine: Ownership cost/hour: Operating cost/hour: %Utilization-riper: Ripper own. cost/hour: Ripper op. cost/hour:	-Wat Truck/Loa Truck 100 \$66.13 \$55.75 NA NA NA	or Grader: eer Truck: der Team Loader 1 \$26 \$30 \$0. \$0.	CAT Water 100 .14 .84 0 .00 .00 .90	r Tanker, 5,000 Support Load Area 100 \$52.66 \$46.34 NA \$0.00 \$0.00	Equipment Dump Area NA NA NA NA NA	Motor Grader	100 0.73 0.60 NA 0.00 0.00 0.69	Water Truck 100 \$25.30 \$36.60 NA \$0.00 \$0.00
Cost Breakdown:OUtilization-machine:Ownership cost/hour:Operating cost/hour:% Utilization-riper:% Utilization-riper:Ripper own.cost/hour:Ripper op. cost/hour:Operator cost/hour:	-Wat Truck/Loa Truck 100 \$66.13 \$55.75 NA NA NA NA \$31.17	r Grader: er Truck: der Team Loader 1 \$26. \$30. \$30. \$0. \$0. \$0. \$40.	CAT Water 100 .14 .84 0 .00 .00 .90	r Tanker, 5,000 Support Load Area 100 \$52.66 \$46.34 NA \$0.00 \$0.00 \$41.52	Equipment Dump Area NA NA NA NA NA NA	Motor Grader	100 0.73 0.60 NA 0.00 0.00 0.69	Water Truck 100 \$25.30 \$36.60 NA \$0.00 \$0.00 \$21.23

## **MATERIAL QUANTITIES**

Initial volume: Loose volume:	605 605	CCY LCY	Swell factor:	1.000	
Sourc	e of estimated volume:	6" over 3/4	acre, Climax		
Source of	estimated swell factor:	Cat Handbo	ook		
Ν	Aaterial Purchase Cost:	\$0.00			
	Total Cost:	\$0.00			

Truck Capacity:							
Truck Payload (weight) Bas			-	~~~			
Material weight:	1,600		Pounds/L	CY			
Description:	Top Soil		<b>N</b> 1				
Rated Payload:	87,000		Pounds				
Payload Capacity:	54.38		LCY				
Truck Bed (volume) Basis:							
Struck Volume:	24.20	LCY					
Heaped Volume:	31.40	LCY					
Average Volume:	27.80	LCY					
Adjusted Volume:	31.40	LCY					
Final	Truck Volume	Based on Nu	mber of Loa	der Passes:	31.61	LCY	
Loading Tool Capacity							
<b>.</b>				Buck	et Size Class:	NA	
Rated Capacity:	4.300	LCY (l	· ·	(100	1100() 1.050		
Bucket Fill Factor:	1.050		moist loam	(100-	110%) 1.050		
Adjusted Capacity:	4.515	LCY					
Job Condition Correction	<u>s:</u>		Site A	Altitude (ft.):	<u>10400</u> feet		
	Truck	Load	ler	Source			
Altitude Adj:	0.600	1.00	00	(CAT HB	5)		
Job Efficiency:	0.830	0.83	0	(CAT HB	3)		
Net Correction:	0.498	0.83	60				
Loading Tool Cycle Time	<u>.</u>	Number of L	oading Tool	Passes Requ	ired to Fill	7	passes
Excavators and Front Shov	els:				Truck:		
Machine Cycle Time		U _	NA				
	within this Bas	<u> </u>	NA				
Track Loaders -		ription:					
Cycle Time Elements (min.					<b>D</b>		
Load: NA	N	Aaneuver:	NA		Dump: 0.1	100	
Wheel and Tra	ck Loaders - Un	adjusted Bas	ic Loader C		oad, dump,	0.500 ^r	minutes
Cycle Time Factors	<b>3</b>				Factor (min.)	Source	<b>,</b>
Material		rial 0.02			0.020	(Cat HE	
Stockpile					0.020	(Cat HE	
Truck Ownership		wnership of t	rucks and lo	aders -	-0.040	(Cat HE	
Operation		eration -0.04			-0.040	(Cat HE	3)
Dump Target					0.000	(Cat HE	
			ycle Time A	diustment	-0.040	minute	
			ed Loader C		0.460	minute	
			Load Time		2.860	minute	
		1,00		r			-

#### Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	1.000	Minutes
Truck Load Time:	2.860	Minutes	Adjusted for site altitude:	2.860	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.667	Minutes

Truck Travel (Haul & Return) Time: maintained 3.0

Truck Travel (Haul & Return) Time: Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1656.00	4.00	3.00	7.00	1281	1.447
2	2568.00	-8.00	3.00	-5.00	2721	1.013

Return Route:

Haul Time: **2.460** minutes

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2568.00	8.00	3.00	11.00	1610	1.681
2	1656.00	-4.00	3.00	-1.00	3706	0.490

2.171	minutes
10.158	minutes

Loading Tool unit						
Production	491.27	LCY/Hour	Adjusted for job et	fficiency:	407.75	LCY/Hour
Truck Unit Production		_				
	186.69	LCY/Hour	Adjusted for job et	fficiency:	154.95	LCY/Hour
Optimal No. of Trucks:	3	Truck(s)	Selected Number o	f Trucks:	3	Truck(s)
		Adjusted hou	rly truck team production:	464.85	LCY/H	Iour
	А	·	k/loader team production:	407.75	LCY/H	Iour
	Adj	usted multiple truc	k/loader team production:	407.75	LCY/H	Iour

Fleet size:	1	Team(s)	Total job time:	1.48	Hours
Unit cost:	\$2.135	/LCY	Total job cost:	\$1,292	

## BULLDOZER WORK

			osoil		
Climax Mine	Pe	rmit Action:	March 2019	Permit/Jo	b#: <u>M1977493</u>
PROJECT IDENTIFI	CATION				
Task #: <u>L03A</u> Date: <u>3/15/2019</u>	State:	Colorado Summit		Abbreviation: Filename:	None NA
User: JLE					
Agency or organ	nization name: DF	RMS			
HOURLY EQUIPME	NT COST				
Basic Machine: Car	t D7R DS Series II L	GP			
Horsepower: 240					
	aight				
Attachment: NA					
	er day RG)				
Cost Breakdown:					
			Utilization %		
Ownership Cost/Hour:		\$66.14	NA		
Operating Cost/Hour:		\$63.91	100		
Ripper own.		\$0.00	NA		
Cost/Hour:			0		
Ripper op. Cost/Hour: Operator Cost/Hour:		\$0.00 \$41.52	0 NA		
Total Fleet Cost/Hour:	\$171.57				
MATERIAL QUANT Initial Volume: 605 Swell factor: 1.00	<b>ITIES</b> 00				
MATERIAL QUANT Initial Volume: 605 Swell factor: 1.00	<u>ITIES</u>				
MATERIAL QUANTInitial Volume:605Swell factor:1.00Loose volume:605Source of estimated volume	ITIES 00 LCY ume:6" Over 3	  3/4 acres, Clir	nax		
MATERIAL QUANT         Initial Volume:       605         Swell factor:       1.00         Loose volume:       605         Source of estimated volu       605	ITIES 00 LCY ume:6" Over 3		nax		
MATERIAL QUANT         Initial Volume:       605         Swell factor:       1.00         Loose volume:       605         Source of estimated volu       605         Source of estimated swe       factor:	ITIES 00 LCY ume: <u>6" Over 3</u> ell Cat Hand		nax		
MATERIAL QUANT         Initial Volume:       605         Swell factor:       1.00         Loose volume:       605         Source of estimated volu       605         Source of estimated volu       500         Source of estimated swe       605         factor:       605	ITIES 00 LCY ume: <u>6" Over 3</u> cat Hand CION		 nax		
MATERIAL QUANT         Initial Volume:       605         Swell factor:       1.00         Loose volume:       605         Source of estimated volu       605         Source of estimated swe       factor:	ITIES 00 LCY ume: <u>6" Over 3</u> ell Cat Hand	book	nax		
MATERIAL QUANT         Initial Volume:       605         Swell factor:       1.00         Loose volume:       605         Source of estimated volu       605         Source of estimated swe       factor:         HOURLY PRODUCT       Average push distance:         Unadjusted hourly       100	ITIES         00         LCY         ume:       6" Over 3         cat Hand         Cat Hand         CION         250 feet         230.4 LCY/	book	nax		
MATERIAL QUANT         Initial Volume:       605         Swell factor:       1.00         Loose volume:       605         Source of estimated volu       605         Source of estimated volu       500         Source of estimated volu       605         Source of estimated sweet       605         Average push distance:       100         Unadjusted hourly       100         production:       100         Materials consistency       100         Average push       100         Average push       100         Materials consistency       100         Materials consistency       100         Materials consistency       100         Materials       100      <	ITIES         00         LCY         ume:       6" Over 3         cat Hand         Loose s         0 %	book	nax		
MATERIAL QUANT         Initial Volume:       605         Swell factor:       1.00         Loose volume:       605         Source of estimated volu       605         Source of estimated volu       500         Source of estimated volu       605         Source of estimated sweet       605         Average push distance:       100         Unadjusted hourly       100         Production:       100         Materials consistency       100         Average push       100	ITIES         00         LCY         ume:       6" Over 3         cat Hand         Cat Hand         Cat Hand         Cat Jone         Cat LCY/         Loose s	book			
MATERIAL QUANT         Initial Volume:       605         Swell factor:       1.00         Loose volume:       605         Source of estimated volu       605         Source of estimated volu       500         Source of estimated volu       605         Source of estimated sweet       605         Average push distance:       100         Unadjusted hourly       100         production:       100         Materials consistency       100         Average push       100         Average push       100         Materials consistency       100         Materials consistency       100         Materials consistency       100         Materials       100      <	ITIES         00         LCY         ume:       6" Over 3         cat Hand         Loose s         0 %	book			

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5187

Adjusted unit production:	119.51 LCY/hr
Adjusted fleet production:	119.51 LCY/hr

Fleet size:	1 Dozer(s)
Unit cost:	\$1.436/LCY

Total job time:	5.06 Hours
Total job cost:	\$869

## BULLDOZER WORK

Climax Mine	Per	mit Action:	March 2019	Permit/Jo	ob#: M1977493
ROJECT IDENTIFI	CATION				
		<b>a</b> 1 1			
Task #: L03B	State:	Colorado		Abbreviation:	None
Date: <u>3/15/2019</u> User: JLE	County:	Summit		Filename:	NA
Agency or organ	ization name: DR	MS			
HOURLY EQUIPME					
	D7R DS Series II LO	JP			
Horsepower: 240					
	night				
Attachment: NA					
Shift Basis: <u>1 pe</u> Data Source: (CR	er day				
	(0)				
Cost Breakdown:			Utilization %		
Ownership Cost/Hour:		\$66.14	NA		
		\$63.91			
Operating Cost/Hour: Ripper own.			100		
Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.52	NA		
MATERIAL QUANTIInitial Volume:605Swell factor:1.00Loose volume:605	0	-			
Source of estimated volu	me: 6" Over 3	/4 acres, Clir	nax		
Source of estimated swel					
factor:					
HOURLY PRODUCT	ION				
Average push distance:	250 feet				
Unadjusted hourly	230.4 LCY/I	or.			
production:	230.4 LC Y/I	ш			
•					
Materials consistency description:	Loose s	tockpile 1.2			
Average push	0 %				
gradient:					
Average site altitude:	10,400 feet	_			
Material weight:	1,600 lbs/LCY				
-					
Weight description:	Top Soil				

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8593

Adjusted unit production:	197.98 LCY/hr
Adjusted fleet production:	<b>197.98</b> LCY/hr

Fleet size:	1 Dozer(s)
Unit cost:	\$0.867/LCY

Total job time:	<b>3.06</b> Hours
Total job cost:	\$524

Climax Mine, M-1977-493

# TRUCK/LOADER TEAM WORK

Task description:	Robinso	on TSF, Loa	iu anu	i Haui Topson			
Site: Climax Mine	Mine Permit Action:				9	Permit/Job#	: M1977493
PROJECT IDENT	TIFICATION						
Task #:M01			olorad		Abb		None
Date: 3/15/2 User: JLE	<u>019</u> C	County: S	ummit	t		Filename: <u>N</u>	NA
	organization nam	ne: DRMS	8				
Agency of 0	ngamzation nan		5				
HOURLY EQUIP	MENT COST	-			Shift ba	sis: <u>1 per day</u>	
			E	quipment Descri	iption		
Tri	uck Loader Tear		Cat 7				
Suppor	t Equipment -Lo	-Loader:		950H 06T XL			
Suppor		mp Area:	NA	JOI AL			
Dead Mai	ntenance – Moto			1014			
Koad Mal	menance – Moto	or Grader.	CAT	12M			
		er Truck:		12M er Tanker, 5,000	Gal.		
	-Wat	er Truck:		er Tanker, 5,000		Maint	
<u>Cost Breakdown</u> :	-Wat	er Truck:		r Tanker, 5,000 Support	Equipment		enance Equipment
	-Wat	er Truck:		er Tanker, 5,000		Mainto Motor Grader	enance Equipment Water Truck
Cost Breakdown:	-Wat	der Truck: der Team Loader		r Tanker, 5,000 Support	Equipment	Motor	Water Truck
	-Wat Truck/Loa Truck	der Truck: der Team Loader	Wate	r Tanker, 5,000 Support Load Area	Equipment Dump Area	Motor Grader	Water Truck 0 100
Cost Breakdown: %Utilization-machine:	-Wat Truck/Loa Truck 100	er Truck: der Team Loader	Wate	r Tanker, 5,000 Support Load Area 100	Equipment Dump Area NA	Motor Grader 10	Water Truck           0         100           3         \$25.30
Cost Breakdown: %Utilization-machine: Ownership cost/hour: Operating cost/hour: %Utilization-riper:	-Wat Truck/Loa Truck 100 \$66.13	er Truck: der Team Loader 1 \$26	Wate	r Tanker, 5,000 Support Load Area 100 \$52.66	Equipment Dump Area NA NA	Motor Grader 10 \$30.7	Water Truck           0         100           3         \$25.30           0         \$36.60
Cost Breakdown: %Utilization-machine: Ownership cost/hour: Operating cost/hour:	-Wat Truck/Loa Truck 100 \$66.13 \$55.75	er Truck: der Team Loader 1 \$26 \$30	Wate	r Tanker, 5,000 Support Load Area 100 \$52.66 \$46.34	Equipment Dump Area NA NA NA	Motor Grader 10 \$30.7 \$30.6	Water Truck           0         100           3         \$25.30           0         \$36.60           A         NA
Cost Breakdown: %Utilization-machine: Ownership cost/hour: Operating cost/hour: %Utilization-riper: Ripper own.	-Wat Truck/Loa Truck 100 \$66.13 \$55.75 NA	er Truck: der Team Loader 1 \$26 \$30 \$0	Wate	r Tanker, 5,000 Support Load Area 100 \$52.66 \$46.34 NA	Equipment Dump Area NA NA NA NA	Motor Grader 10 \$30.7 \$30.6 NA	Water Truck           0         100           3         \$25.30           0         \$36.60           A         NA           0         \$0.00
Cost Breakdown: %Utilization-machine: Ownership cost/hour: Operating cost/hour: %Utilization-riper: Ripper own. cost/hour:	-Wat Truck/Loa Truck 100 \$66.13 \$55.75 NA NA	er Truck: der Team Loader 1 \$26 \$30 \$0	Wate	r Tanker, 5,000 Support Load Area 100 \$52.66 \$46.34 NA \$0.00	Equipment Dump Area NA NA NA NA	Motor Grader 10 \$30.7 \$30.6 NA \$0.0	Water Truck           0         100           3         \$25.30           0         \$36.60           A         NA           0         \$0.00           0         \$0.00
Cost Breakdown: %Utilization-machine: %Utilization-machine: Ownership cost/hour: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utiliza	-Wat Truck/Loa Truck 100 \$66.13 \$55.75 NA NA NA	er Truck: der Team Loader 1 \$26 \$30 \$0 \$0 \$0	Wate	r Tanker, 5,000 Support Load Area 100 \$52.66 \$46.34 NA \$0.00 \$0.00	Equipment Dump Area NA NA NA NA NA	Motor Grader 10 \$30.7 \$30.6 N/ \$0.0 \$0.0	Water Truck           0         100           3         \$25.30           0         \$36.60           A         NA           0         \$0.00           0         \$0.00           9         \$21.23
Cost Breakdown: %Utilization-machine: %Utilization-machine: Ownership cost/hour: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-machine: %Utilization-machine: %Utilization-machine: %Utilization-machine: %Utilization-machine: %Utilization-machine: %Utilization-machine: %Utilization-machine: %Utilization-machine: %Utilization-machine: %Utilization-machine: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utilization-riper: %Utiliz	Wat Truck/Loa Truck 100 \$66.13 \$55.75 NA NA NA NA \$31.17	er Truck: der Team Loader 1 \$26 \$30 \$0 \$0 \$0 \$40	Wate	r Tanker, 5,000 Support Load Area 100 \$52.66 \$46.34 NA \$0.00 \$0.00 \$41.52	Equipment Dump Area NA NA NA NA NA NA	Motor Grader 10 \$30.7 \$30.6 N/ \$0.0 \$0.0 \$28.6 \$90.0	Water Truck           0         100           3         \$25.30           0         \$36.60           A         NA           0         \$0.00           0         \$0.00           9         \$21.23

## **MATERIAL QUANTITIES**

Initial volume:	100,000	CCY	Swell factor:	1.000	
Loose volume:	100,000	LCY			
	e of estimated volume:				
Source of estimated swell factor:		Cat Handbo	ook		
Ν	Aaterial Purchase Cost:	\$0.00			
	Total Cost:	\$0.00			

Truck Capacity:							
Truck Payload (weight) Bas				~~~			
Material weight:	1,600		Pounds/L	CY			
Description:	Top Soil						
Rated Payload:	87,000		Pounds				
Payload Capacity:	54.38		LCY				
Truck Bed (volume) Basis:	24.20						
Struck Volume:	24.20	LCY					
Heaped Volume:	31.40	LCY					
Average Volume:	27.80	LCY					
Adjusted Volume:	31.40	LCY					
Final	Truck Volume	Based on Nu	mber of Loa	der Passes:	31.61	LCY	
Loading Tool Capacity							
	4 200	1 037 4	1	Buck	et Size Class:	NA	
Rated Capacity:	4.300		neaped)	/100	1100() 1.050		
Bucket Fill Factor:	1.050		moist loam	(100-	110%) 1.050		
Adjusted Capacity:	4.515	LCY					
Job Condition Corrections	<u>s:</u>		Site A	Altitude (ft.):	<u>10400</u> feet		
	Truck	Load	ler	Source			
Altitude Adj:	0.600	1.00	00	(CAT HB	5)		
Job Efficiency:	0.830	0.83	30	(CAT HB	5)		
Net Correction:	0.498	0.83	30				
Loading Tool Cycle Time	<u>.</u> ]	Number of L	oading Tool	Passes Requ	ired to Fill	7	passes
Excavators and Front Show	els:				Truck:	1	
Machine Cycle Time			NA				
	within this Basi		NA				
Track Loaders -		ription:					
Cycle Time Elements (min.)		-	2.7.4				
Load: NA	N	laneuver:	NA		Dump: 0.1	100	
Wheel and Trac	ck Loaders - Un	adjusted Bas	ic Loader C		ad, dump,	0.500	ninutes
Cycle Time Factors					Factor (min.)	Source	
Material		rial 0.02			0.020	(Cat HE	
Stockpile					0.020	(Cat HE	
Truck Ownership:		vnership of t	rucks and lo	aders -	-0.040	(Cat HE	<u> </u>
Operation		eration -0.04			-0.040	(Cat HE	<u></u>
Dump Target:	^				0.000	(Cat HE	
			ycle Time A	diustment	-0.040	minute	
			ed Loader C		0.040	minute	
			Load Time		2.860	minute	
		1.00	Loug Time	roi iiuen.	<b></b>	minute	-

#### Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	1.000	Minutes
Truck Load Time:	2.860	Minutes	Adjusted for site altitude:	2.860	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.667	Minutes

Truck Travel (Haul & Return) Time: maintained 3.0 Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Haul Kout						
Seg #	Haul Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel
	(Ft)		(%)	(%)	(fpm)	Time (min)
1	4270.00	0.00	3.00	3.00	3005	2.213

				Haul Time:	2.213	minutes
Return Rou	ite:					
Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	4270.00	0.00	3.00	3.00	3005	1.588

Return Time:	1.588	minutes
Total Truck Cycle Time:	9.328	minutes

Loading Tool unit						
Production	491.27	LCY/Hour	Adjusted for job ef	ficiency:	407.75	LCY/Hour
Truck Unit Production						-
	203.30	LCY/Hour	Adjusted for job ef	ficiency:	168.74	LCY/Hour
		_				-
Optimal No. of Trucks:	2	Truck(s)	Selected Number of	f Trucks:	2	Truck(s)
-						
		Adjusted hour	ly truck team production:	337.48	LCY/H	our
	A	Adjusted single truck/loader team production:			LCY/H	lour
	Adj	usted multiple truc	k/loader team production:	337.48	LCY/H	lour
JOB TIME AN	D COST					

Fleet size:	1	Team(s)	Total job time:	296.32	Hours
Unit cost:	\$2.127	/LCY	Total job cost:	\$212,656	

## BULLDOZER WORK

Climax Mine	Per	mit Action:	March 2019	Permit/Jo	b#: <u>M1977493</u>
Task #:         M02           Date:         3/15/2019	CATION State: County:	Colorado Summit		Abbreviation: Filename:	None NA
User: JLE					
Agency or organ	ization name: DR	MS			
HOURLY EQUIPME	NT COST				
	D6T LGP				
Horsepower: 200					
I	, aight				
Attachment: NA	•				
	er day				
Data Source: (CH					
	- /				
Cost Breakdown:		¢50.71	Utilization %		
Ownership Cost/Hour:		\$50.71 \$42.03	<u>NA</u>		
Operating Cost/Hour:		φ42.03	100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0	<u> </u>	
Operator Cost/Hour:		\$41.52	NA		
MATERIAL QUANT Initial Volume: 100, Swell factor: 1.00	000	-			
Loose volume: 100,	000 LCY	_			
Source of estimated volu	ime: Climax's	Estimate			
Source of estimated swe					
factor:					
HOURLY PRODUCT	ION				
	150 feet				
Average push distance: Unadjusted hourly production:	212.5 LCY/	hr			
Materials consistency description:	Loose s	tockpile 1.2			
Average push gradient:	0 %				
Average site altitude:	11,100 feet				
Material weight:	1,600 lbs/LCY				
Weight descriptions	Top Coll				
Weight description:	Top Soil				

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	0.940	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8078

Adjusted unit production:	171.66 LCY/hr
Adjusted fleet production:	<b>343.32</b> LCY/hr

Fleet size:	2 Dozer(s)
Unit cost:	\$0.782/LCY

Total job time:	<b>291.27</b> Hours
Total job cost:	\$78,213

Climax Mine, M-1977-493

# TRUCK/LOADER TEAM WORK

Task description:	I Dam,	Load and Haul	1 opsoii/Biosoiid	S		
Site: Climax Mine		Permit Act	ion: March 201	19	Permit/Job#: _	M1977493
PROJECT IDEN	TIFICATION					
Task #: N01		State: Colora	ado	Abb	previation: No	ne
Date: $3/15/$	2019 0	County: Summ	uit		Filename: NA	L,
User: JLE						
Agency or	organization nan	ne: DRMS				
HOURLY EQUI	PMENT COST			Shift ba	sis: <u>1 per day</u>	
		_	Equipment Descr			
Т	ruck Loader Tea			-		
-Loader: CAT 950H Support Equipment -Load Area: Cat D6T XL						
Suppo		imp Area: NA	DOIAL			
Road Maintenance – Motor Grader: CAT 12M						
	-Wat	ter Truck: Wat	ter Tanker, 5,000	Gal.		
Cost Breakdown:	Truck/Loa	der Team	Support	Equipment	Maintena	ance Equipment
		1			Motor	Water Truck
	Truck	Loader	Load Area	Dump Area	Grader	
%Utilization-machine:	Truck 100	Loader 100	Load Area	Dump Area NA		100
%Utilization-machine: Ownership cost/hour:				-	Grader	
	100	100	100	NA	Grader 100	100
Ownership cost/hour: Operating cost/hour: %Utilization-riper:	100 \$66.13	100 \$26.14	100 \$52.66	NA NA	Grader 100 \$30.73	100 \$25.30
Ownership cost/hour: Operating cost/hour:	100 \$66.13 \$55.75	100 \$26.14 \$30.84	100 \$52.66 \$46.34	NA NA NA	Grader 100 \$30.73 \$30.60	100 \$25.30 \$36.60
Ownership cost/hour: Operating cost/hour: %Utilization-riper: Ripper own.	100 \$66.13 \$55.75 NA	100 \$26.14 \$30.84 0	100 \$52.66 \$46.34 NA	NA NA NA NA	Grader 100 \$30.73 \$30.60 NA	100 \$25.30 \$36.60 NA
Ownership cost/hour: Operating cost/hour: %Utilization-riper: Ripper own. cost/hour:	100 \$66.13 \$55.75 NA NA	100 \$26.14 \$30.84 0 \$0.00	100 \$52.66 \$46.34 NA \$0.00	NA NA NA NA	Grader 100 \$30.73 \$30.60 NA \$0.00	100 \$25.30 \$36.60 NA \$0.00
Ownership cost/hour: Operating cost/hour: %Utilization-riper: Ripper own. cost/hour: Ripper op. cost/hour:	100 \$66.13 \$55.75 NA NA NA	100 \$26.14 \$30.84 0 \$0.00 \$0.00	100 \$52.66 \$46.34 NA \$0.00 \$0.00	NA NA NA NA NA	Grader 100 \$30.73 \$30.60 NA \$0.00 \$0.00	100 \$25.30 \$36.60 NA \$0.00 \$0.00
Ownership cost/hour: Operating cost/hour: %Utilization-riper: Ripper own. cost/hour: Ripper op. cost/hour: Operator cost/hour:	100 \$66.13 \$55.75 NA NA NA \$31.17	100 \$26.14 \$30.84 0 \$0.00 \$0.00 \$40.90	100 \$52.66 \$46.34 NA \$0.00 \$0.00 \$41.52	NA NA NA NA NA NA	Grader 100 \$30.73 \$30.60 NA \$0.00 \$0.00 \$28.69	100 \$25.30 \$36.60 NA \$0.00 \$0.00 \$21.23

Initial volume:	34,936	CCY	Swell factor:	1.000	
Loose volume:	34,936	LCY			
Source	ce of estimated volume:	Climax Es	tiamte		
Source of estimated swell factor:		Cat Handb	ook		
1	Material Purchase Cost:	\$0.00			
	Total Cost:	\$0.00			
	-				

Truck Capacity:						
Truck Payload (weight) Bas		Devend				
Material weight: Description:	1,600 Top Soil	Pound	Pounds/LCY			
Rated Payload:	87,000	Pound	le			
Payload Capacity:	54.38	LCY	15			
Tuyloud Cupuchy:						
Truck Bed (volume) Basis:						
Struck Volume:	24.20	LCY				
Heaped Volume:	31.40	LCY				
Average Volume:	27.80	LCY				
Adjusted Volume:	31.40	LCY				
Final	Truck Volume	Based on Number of	Loader Passes:	31.61	LCY	
Loading Tool Capacity						
Rated Capacity:	4.300	LCY (heaped)	Buck	tet Size Class: <u>N</u>	NA	
Bucket Fill Factor:	1.050	Other - moist lo	oam (100-	110%) 1.050		
Adjusted Capacity:	4.515	LCY	X	,		
Job Condition Corrections	<u>s:</u>	Si	ite Altitude (ft.):	<u>11000</u> feet		
	Truck	Loader	Source			
Altitude Adj:	0.600	1.000	(CAT HE	3)		
Job Efficiency:	0.830	0.830	(CAT HE	3)		
Net Correction:	0.498	0.830				
Loading Tool Cycle Time	<u>.</u>	Number of Loading T	Tool Passes Requ		7 passes	
Excavators and Front Shove	els:			Truck:	·	
Machine Cycle Time Selected Value						
Track Loaders -						
Cycle Time Elements (min.)	):					
Load: NA	N	Maneuver: NA		Dump: 0.10	0	
Wheel and Trac	ck Loaders - Un	adjusted Basic Loade	•	-	).500 minutes	
~	1		n	naneuver):		
Cycle Time Factors		: 10.02		Factor (min.)	Source	
Material				0.020	(Cat HB)	
Stockpile:	· · ·		d loo dore	0.020	(Cat HB)	
Truck Ownership:	0.04	wnership of trucks and	a loaders -	-0.040	(Cat HB)	
Operation		eration -0.04		-0.040	(Cat HB)	
Dump Target:	Nominal tar			0.000	(Cat HB)	
				$\Omega \Omega \Delta \Omega$	minutes	
		•	e Adjustment:	-0.040		
		Adjusted Loade	•	0.460 2.860	minutes minutes minutes	

#### Truck Cycle Time:

Truck Exchange Time: 0.60

March 2019, DRMS Cost Estimate

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Truck Load Time:	2.860	Minutes	Adjusted for site altitude:	2.860	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.667	Minutes

maintained 3.0

Truck Travel (Haul & Return) Time: Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

]	Haul Route:								
	Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)		
	1	5280.00	0.00	3.00	3.00	3005	2.549		

						Haul Time:	2.549	minu	tes
	Return Rou	ite:							
	Seg #	Haul Dis	stance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	
		(Ft)			(%)	(%)	(fpm)	Time (min)	
	1	5280.00		0.00	3.00	3.00	3005	1.924	
						Return Time:	1.924	min	utes
					Total Truc	k Cycle Time:	10.000	) min	utes
L	oading Too	l unit							
	Produ	ction	491.27	LCY/Hour		Adjusted for jo	ob efficiency:	407.75	LCY/Hour
Truck	Unit Produ	ction					-		
			189.64	LCY/Hour		Adjusted for jo	ob efficiency:	157.40	LCY/Hour
Optima	al No. of Tr	ucks:	3	Truck(s)	:	Selected Numb	er of Trucks:	3	Truck(s)
				Adjusted	hourly truck	team productio	on: 472.	19 LC	Y/Hour
				Adjusted single	•	-			Y/Hour
			A	djusted multiple	e truck/loader	team productio	on: <b>407.</b>	75 LC	Y/Hour
						_			
	JOB TIM	E AND	COST						
	Fleet s	size:	1	Team(s)	Тс	otal job time:	85.68	<b>3</b> I	Hours

 Unit cost:
 \$2.135
 /LCY
 Total job cost:
 \$74,602

## BULLDOZER WORK

Task description:	1 Dam, Spread	Topsoil/Bios	olids		
te: Climax Mine	Pe	rmit Action:	March 2019	Permit/Jo	b#: <u>M1977493</u>
PROJECT IDENTIF	ICATION				
Task #:       N02         Date:       3/15/2019         User:       JLE	State:	Colorado Summit		Abbreviation: Filename:	None NA
Agency or orga	nization name: DI	RMS			
HOURLY EQUIPMI	ENT COST				
	at D6T LGP				
Horsepower: 20	00		-		
Blade Type: St	raight		-		
Attachment: N			_		
	per day		_		
Data Source: (C	CRG)		-		
Cost Breakdown:		1			
		<b><b><b>6507</b>1</b></b>	Utilization %		
Ownership Cost/Hour:		\$50.71	NA		
Operating Cost/Hour:		\$42.03	100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.52	NA		
Total unit Cost/Hour:	\$134.26				
Total Fleet Cost/Hour:	\$268.52				
Swell factor: 1.0	936 00	_			
Loose volume: 34,	936 LCY	_			
Source of estimated vo Source of estimated sw factor:		Estimate lbook			
HOURLY PRODUC	TION				
Average push distance: Unadjusted hourly production:	150 feet 212.5 LCY	/hr			
Materials consistency description:	Loose	stockpile 1.2			
Average push gradient:	0 %				
Average site altitude:	11,100 feet				
Material weight:	1,600 lbs/LCY				
Weight description:	Top Soil				
Job Condition Correction	n Factor		Source		
Operator		.750	(AVG.)		

Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	0.940	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8078

Adjusted unit production:	171.66 LCY/hr	
Adjusted fleet	<b>343.32</b> LCY/hr	
production:	<b>575.52</b> LC 1/11	

Fleet size:	2 Dozer(s)
Unit cost:	\$0.782/LCY

Total job time:	101.76 Hours
Total job cost:	\$27,325

## BULLDOZER RIPPING WORK

]	Task description:	Roads; rip swite	McNulty OSF t	o LBM			
Site:	Climax Mine Permit Action: _N		March 2019	)	Permit/Job#: M1977493		
P	ROJECT IDENTIFI	CATION					
	Task #:         O01           Date:         3/15/2019           User:         JLE	State: County:	Colorado Summit				None NA
	Agency or organi	ization name: D	RMS				
H	OURLY EQUIPMEN	NT COST					
	Basic Machine:			_	Horsepower:	574	
	Ripper Attachment:	1-Shank Ripper	r	_	Shift Basis: Data Source:	1 per (CR	
					Data Source.	(CK	0)
<u>Co</u>	ost Breakdown:				Utilization %		
	Owner	ship Cost/Hour:		\$129.20	NA		
		ting Cost/Hour:		\$127.20	100	-	
	1	ship Cost/Hour:		\$18.04	NA	-	
	Ripper Opera	ting Cost/Hour:		\$10.15	100	-	
	Oper	ator Cost/Hour:		\$41.52	NA	_	
	Total	Unit Cost/Hour:		\$320.73			
	Total F	Fleet Cost/Hour:	\$641	.46			

	MATERIAL Q	<u>UANTITIES</u>	Selec	Selected estimating method: Area				
	Alternate Method	<u>s:</u>						
Seismic	:: NA		Bank Volume:	NA	BCY		NA	
Area		acres	Rip Depth (ft):	1.00	Volume:	83,829		BCY or CCY
		Source of estim	ated quantity:18,860	LF Road at 120 fe	et wide			
	HOURLY PRO	<b>DUCTION</b>						
	Seismic:	~			<b>a</b> (			
		Se	eismic Velocity:	NA	feet/seco	ond		
	Area:							
			Ripping Depth:	4.49	mph			
		Average	Ripping Width:	6.74	degrees			
		Average l	Ripping Length:	500.00	feet			
			ge Dozer Speed:	88.00	feet			
		Average N	Maneuver Time:	0.25	feet			
		Production	on per unit area:	0.783	acres/ho	our		
	Job Condition Co	rrection Factors						
	Una	adjusted Hourly U	Unit Production:	0.783	Acres/h	r		
			Site Altitude:	13,000	feet			
			Altitude Adj:	0.89	(CAT H	B)		
			Job Efficiency:	0.83	(1 shift/	day)		
			Net Correction:	0.74	multipli	er		
			ourly Unit Production:	0.58	Acres/hr			
		Adjusted H	ourly Fleet Production:	1.16	Acres/hr			
	JOB TIME AN	D COST						
	Fleet size:	2	Grader(s)	Total job time:	4	4.94	Hours	S
	Unit cost:	\$554.838	Per acre	Total job cost:	\$2	8,829		

## BULLDOZER RIPPING WORK

Task description:	Roads; rip other site roads				
Site: Climax Mine	Permit Action	March 2019	9	Permit/Job#: <u>M197</u>	7493
PROJECT IDENTIFIC	CATION				
Task #: 002	State: Colorado		Abbre	viation: None	
Date: 3/15/2019	County: Summit		Fi	lename: NA	
User: JLE					
Agency or organi	zation name: DRMS				
HOURLY EQUIPMEN	VT COST				
Basic Machine:			Horsepower:	310	
Ripper Attachment:			Shift Basis:	1 per day	
Tupper Thuesmient.			Data Source:	(CRG)	
Cost Breakdown:			_		
			Utilization %		
	ship Cost/Hour:	\$93.62	NA		
	ting Cost/Hour:	\$73.35	100		
	ship Cost/Hour:	\$8.93	NA		
	ting Cost/Hour:	\$7.78	100		
-	ator Cost/Hour: Jnit Cost/Hour:	\$41.52 \$225.20	NA		
			-		
Total F	leet Cost/Hour: \$45	0.40	-		
MATERIAL QUANTI	TIES Sele	cted estimating	g method: Area		
Alternate Methods:					
Seismic: NA	Bank Volume:	NA	BCY	NA	
	res Rip Depth (ft):		Volume:	24,926	BCY or CCY
Source	of estimated quantity: DRMS	S Estimate base	ed on Climax's roa	d lengths provided	
	· · ·				
HOURLY PRODUCTI	<u>.UN</u>				
<u>Seismic:</u>		NT A	<b>C</b> /	1	
	Seismic Velocity:	NA	feet/seco	ond	
<u>Area:</u>					
	Average Ripping Depth:	2.56	mph		
	verage Ripping Width:	7.08	degrees		
A	verage Ripping Length:	500.00	feet		
	Average Dozer Speed:	88.00	feet		
	verage Maneuver Time:	0.25	feet		
P	roduction per unit area:	0.822	acres/ho	ur	
Job Condition Correction F	<u>actors</u>				
Unadjusted H	Iourly Unit Production:	0.822	Acres/hr		
	Site Altitude:	13,000	feet		
	Altitude Adj:	0.93	(CAT H	B)	
	Job Efficiency:	0.83	(1 shift/c	,	
	Net Correction:	0.77	multiplie	•	
٩	usted Hourly Unit Production:	0.63	Acres/hr		
	usicu mounty chill i totilicition	().())			

Climax Mine, M-1977-493		March 2019	9, DRMS Cost Estimate	Page 130 of 180		
Fleet size:	2	Grader(s)	Total job time:	12.17	Hours	
Unit cost:	\$354.918	Per acre	Total job cost:	\$5,483		

Climax Mine, M-1977-493

# TRUCK/LOADER TEAM WORK

Task description:	Koads, I		_	oil/Biosolids				
ite: Climax Mine		Permi	t Action:	March 201	19	Permit/Jo	b#:	M1977493
PROJECT IDENT	<b>IFICATION</b>							
Task #: 003		State: C	olorado		A	bbreviation:	Non	e
Date: 3/18/20	019 C		ummit			Filename:	NA	
User: JLE								
Agency or or	rganization nam	e: DRM	S					
HOURLY EQUIPM	MENT COST				Shift	pasis: <u>1 per d</u> a	av	
			Equit	oment Descr		-*		
Tru	ick Loader Tear	n -Truck:	Cat 740		T · ·			
<u> </u>		-Loader:	CAT 95					
Support	t Equipment -Lo	mp Area:	Cat D6T NA	XL				
Road Mair	ntenance – Moto		CAT 12	M				
	-Wat	er Truck:	Water Ta	anker, 5,000	Gal.			
Cost Breakdown:	Truck/Load	lan Taam		Suggest	Equipment	Ма	intono	nce Equipment
Cost Dreakuowii:	Truck	Loader	Lo	ad Area	Dump Area	Motor	mena	Water Truck
		200001	20		2 unip 1 2 u	Grader		
Utilization-machine:	100	-	100	100	NA		100	100
Ownership cost/hour:	\$66.13	\$26	.14	\$52.66	NA	\$30	0.73	\$25.30
Operating cost/hour:	\$55.75	\$30	.84	\$46.34	NA	\$30	0.60	\$36.60
%Utilization-riper:	NA		0	NA	NA		NA	NA
Ripper own. cost/hour:	NA	\$0	.00	\$0.00	NA	\$0	0.00	\$0.00
Ripper op. cost/hour:	NA	\$0	.00	\$0.00	NA	\$0	0.00	\$0.00
Operator cost/hour:	\$31.17	\$40	.90	\$41.52	NA	\$28	8.69	\$21.23
Unit Subtotals:	\$153.05	\$97	.89	\$140.52	NA	\$90	0.02	\$83.13
Number of Units:	3		1	1	0		1	1
Group Subtotals:	Work:	\$557.04		Support:	\$140.52	Ma	aint:	\$173.15
Total work team cost/h	hour: <u>\$870.71</u>							
MATERIAL QUA	NTITIES							
Initial volume:	108,755		CCY	Swell	factor: 1.000			
Loose volume:	108,75		LCY					

se volume. 100,75	5	
Source of estimated	volume:	1 Ft over 67.41 acres
Source of estimated swel	l factor:	Cat Handbook
Material Purcha	se Cost:	\$0.00
Tot	tal Cost:	\$0.00
	-	

Truck Capacity:							
Truck Payload (weight) Basi			<b>D</b>	~ * *			
Material weight:	1,600		Pounds/LC	ĽΥ			
Description:	Top Soil		D 1				
Rated Payload:	87,000		Pounds				
Payload Capacity:	54.38		LCY				
Truck Bed (volume) Basis:	24.20	LOV					
Struck Volume:	24.20	LCY					
Heaped Volume:	31.40	LCY					
Average Volume:	27.80	LCY					
Adjusted Volume:	31.40	LCY					
Final	Truck Volume	Based on Nur	nber of Loa	der Passes:	31.61	LCY	
Loading Tool Capacity							
	1.000		•	Buck	et Size Class: _	NA	
Rated Capacity:	4.300	LCY (he	· ·	/100	1100/1050		
Bucket Fill Factor:	1.050		moist loam	(100-	110%) 1.050		
Adjusted Capacity:	4.515	LCY					
Job Condition Corrections	<u>:</u>		Site A	ltitude (ft.):	<u>11000</u> feet		
	Truck	Loade		Source			
Altitude Adj:	0.600	1.000	)	(CAT HB	5)		
Job Efficiency:	0.830	0.830	)	(CAT HB			
Net Correction:	0.498	0.830	)				
Loading Tool Cycle Time:		Number of Lo	ading Tool	Passes Requ	ired to Fill	7	passes
Excavators and Front Shove	els:				Truck:	7	_
Machine Cycle Time v Selected Value			NA NA				
			NA				
Track Loaders –		iption:					
Cycle Time Elements (min.)		(	T A		D	00	
Load: NA	IV	Ianeuver: <u>N</u>	NA		Dump: 0.1	.00	
Wheel and Trac	k Loaders - Un	adjusted Basic	c Loader Cy		ad, dump,	0.500 m	inutes
Cycle Time Factors					Factor (min.)	Source	
Material:	Mixed mate	rial 0.02			0.020	(Cat HB)	)
Stockpile:	Dumped by				0.020	(Cat HB)	
Truck Ownership:		vnership of tru	icks and loa	ders -	-0.040	(Cat HB)	
Operation:		eration -0.04			-0.040	(Cat HB)	)
Dump Target:					0.000	(Cat HB)	
Dump Turget.	r toninur tur		cle Time Ad	liustment [.]	-0.040	minutes	,
			d Loader Cy		0.460	minutes	
			Load Time		2.860	minutes	

#### Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	1.000	Minutes
Truck Load Time:	2.860	Minutes	Adjusted for site altitude:	2.860	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.667	Minutes

Truck Travel (Haul & Return) Time: maintained 3.0 Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	5280.00	0.00	3.00	3.00	3005	2.549

Return Ro	ıte:			Haul Time:	2.549	minutes
Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	5280.00	0.00	3.00	3.00	3005	1.924

Return Time:	1.924	minutes
Total Truck Cycle Time:	10.000	minutes

Loading Tool unit Production Truck Unit Production	491.27	LCY/Hour	Adjusted for job e	fficiency:	407.75	LCY/Hour
_	189.64	LCY/Hour	Adjusted for job e	fficiency:	157.40	LCY/Hour
Optimal No. of Trucks:	3	Truck(s)	Selected Number of	of Trucks:	3	Truck(s)
		Adjusted hour	ly truck team production:	472.19	LCY/H	our
	А	djusted single truck	k/loader team production:	407.75	LCY/H	our
	Adj	usted multiple truck	c/loader team production:	407.75	LCY/H	our
JOB TIME ANI	O COST					

Fleet size:	1	Team(s)	Total job time:	266.72	Hours
Unit cost:	\$2.135	/LCY	Total job cost:	\$232,234	_

## BULLDOZER WORK

Climax Mine		Pe	ermit Action:	March 2019	Permit/Jo	b#: <u>M1</u>	977493
ROJECT IDENI	<b>TIFICA</b>	TION					
Task #: 004		State:	Colorado		Abbreviation:	None	
Date: 3/18/2	:019	County:	Summit		Filename:	NA	
User: JLE							
Agency or o	organizati	on name: D	RMS				
OURLY EQUIP	MENT (	COST					
Basic Machine:	Cat D6T	LGP					
Horsepower:	200			-			
Blade Type:	Straight			-			
Attachment:	NA			-			
Shift Basis:	1 per da	у		-			
Data Source:	(CRG)			-			
ost Breakdown:							
<u></u> -				Utilization %			
Ownership Cost/Ho	our:		\$50.71	NA			
Operating Cost/Ho			\$42.03	100			
Ripper o							
	WII.			NA			
Cost/Ho			\$0.00	1421			
Cost/He	our:		\$0.00	0			
	our: our: our: ır:\$1.	34.26 02.78					
Cost/He Ripper op. Cost/He Operator Cost/He Total unit Cost/Hou Total Fleet Cost/Ho IATERIAL QUA Initial Volume: Swell factor: Loose volume:	Dur: Dur: ur: NTITIE 108,755 1.000 108,755 1	02.78	\$0.00 \$41.52	0 NA			
Cost/He Ripper op. Cost/He Operator Cost/He Total unit Cost/Hou Total Fleet Cost/Ho Initial Volume: Swell factor: Loose volume: Source of estimated	Dur: Dur: ur: NTITIE 108,755 1.000 108,755 I volume:	02.78 2 <u>S</u> 2CY 1 Foot o	\$0.00 \$41.52	0 NA			
Cost/He Ripper op. Cost/He Operator Cost/He Total unit Cost/Hou Total Fleet Cost/Ho IATERIAL QUA Initial Volume: Swell factor: Loose volume:	Dur: Dur: ur: NTITIE 108,755 1.000 108,755 I volume:	02.78	\$0.00 \$41.52	0 NA			
Cost/Ho Ripper op. Cost/Ho Operator Cost/Ho Total unit Cost/Hou Total Fleet Cost/Ho Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated	Dur: Dur: ur: NTITIE 108,755 1.000 108,755 I volume:	02.78 2 <u>S</u> 2CY 1 Foot o	\$0.00 \$41.52	0 NA			
Cost/Ho Ripper op. Cost/Ho Operator Cost/Ho Total unit Cost/Hou Total Fleet Cost/Ho IATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor:	Dur: Dur: Dur: ur: NTITIE 108,755 1.000 108,755 I volume: swell	02.78 25 2CY 1 Foot or Cat Hand	\$0.00 \$41.52	0 NA			
Cost/Ho Ripper op. Cost/Ho Operator Cost/Ho Total unit Cost/Hou Total Fleet Cost/Ho IATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor:	Dur: Dur: ur: ur: NTITIE 108,755 1.000 108,755 I l volume: l swell UCTION	02.78 25 2CY 1 Foot or Cat Hand	\$0.00 \$41.52	0 NA			
Cost/Ho Ripper op. Cost/Ho Operator Cost/Ho Total unit Cost/Hou Total Fleet Cost/Ho IATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor:	Dur: Dur: ur: ur: NTITIE 108,755 1.000 108,755 I l volume: l swell UCTION	02.78 25 2CY 1 Foot ov Cat Hand 150 feet	\$0.00 \$41.52	0 NA			
Cost/Ho Ripper op. Cost/Ho Operator Cost/Ho Total unit Cost/Hou Total Fleet Cost/Ho Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor: IOURLY PRODU Average push distar Unadjusted hourly	Dur: Dur: ur: ur: NTITIE 108,755 1.000 108,755 I l volume: l swell UCTION	02.78 25 2CY 1 Foot or Cat Hand	\$0.00 \$41.52	0 NA			
Cost/Ho Ripper op. Cost/Ho Operator Cost/Ho Total unit Cost/Hou Total Fleet Cost/Ho IATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor:	Dur: Dur: ur: ur: NTITIE 108,755 1.000 108,755 I l volume: l swell UCTION	02.78 25 2CY 1 Foot ov Cat Hand 150 feet	\$0.00 \$41.52	0 NA			
Cost/He Ripper op. Cost/He Operator Cost/He Total unit Cost/Hou Total Fleet Cost/Ho IATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated factor: OURLY PRODU Average push distar Unadjusted hourly production:	Dur: Dur: ur: NTITIE 108,755 1.000 108,755 I Volume: swell UCTION nce:	02.78 2S LCY <u>1 Foot or</u> Cat Hand <u>150 feet</u> 212.5 LCY	\$0.00 \$41.52	0 NA			
Cost/He Ripper op. Cost/He Operator Cost/He Total unit Cost/Hou Total Fleet Cost/Ho IATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor: Average push distar Unadjusted hourly production: Materials consistence	Dur: Dur: ur: NTITIE 108,755 1.000 108,755 I Volume: swell UCTION nce:	02.78 2S LCY <u>1 Foot or</u> Cat Hand <u>150 feet</u> 212.5 LCY	\$0.00 \$41.52	0 NA			
Cost/He Ripper op. Cost/He Operator Cost/He Total unit Cost/Hou Total Fleet Cost/Ho IATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated factor: OURLY PRODU Average push distar Unadjusted hourly production:	Dur: Dur: ur: NTITIE 108,755 1.000 108,755 I Volume: swell UCTION nce:	02.78 2S LCY <u>1 Foot or</u> Cat Hand <u>150 feet</u> 212.5 LCY	\$0.00 \$41.52	0 NA			
Cost/Ho Ripper op. Cost/Ho Operator Cost/Ho Total unit Cost/Hou Total Fleet Cost/Ho IATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor: IOURLY PRODU Average push distar Unadjusted hourly production: Materials consistent description:	Dur: Dur: Dur: ur: NTITIE 108,755 1.000 108,755 I l volume: l swell UCTION nce:	02.78 <u>S</u> <u>CCY</u> <u>1 Foot or</u> Cat Hand <u>150 feet</u> <u>212.5 LCY</u> Loose	\$0.00 \$41.52	0 NA			
Cost/He Ripper op. Cost/He Operator Cost/He Total unit Cost/Hou Total Fleet Cost/Hou Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor: <b>COURLY PRODU</b> Average push distan Unadjusted hourly production: Materials consistened description: Average push	Dur: Dur: ur: NTITIE 108,755 1.000 108,755 I Volume: swell UCTION nce:	02.78 <u>S</u> <u>CCY</u> <u>1 Foot or</u> Cat Hand <u>150 feet</u> <u>212.5 LCY</u> Loose	\$0.00 \$41.52	0 NA			
Cost/He Ripper op. Cost/He Operator Cost/He Total unit Cost/Hou Total Fleet Cost/Hou Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor: <b>COURLY PRODU</b> Average push distar Unadjusted hourly production: Materials consistened description: Average push gradient:	Dur: Dur: Dur: ur: NTITIE 108,755 1.000 108,755 I 108,755 I I 108,755 I I I 108,755 I I I I I I I I I I I I I I I I I I I	02.78 2S LCY <u>1 Foot or</u> Cat Hand <u>150 feet</u> 212.5 LCY Loose 6	\$0.00 \$41.52	0 NA			
Cost/He Ripper op. Cost/He Operator Cost/He Total unit Cost/Hou Total Fleet Cost/Hou Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor: <b>COURLY PRODU</b> Average push distan Unadjusted hourly production: Materials consistened description: Average push	Dur: Dur: Dur: ur: NTITIE 108,755 1.000 108,755 I 108,755 I I 108,755 I I I 108,755 I I I I I I I I I I I I I I I I I I I	02.78 <u>S</u> <u>CCY</u> <u>1 Foot or</u> Cat Hand <u>150 feet</u> <u>212.5 LCY</u> Loose	\$0.00 \$41.52	0 NA			
Cost/He Ripper op. Cost/He Operator Cost/He Total unit Cost/Hou Total Fleet Cost/Ho Initial Volume: Swell factor: Loose volume: Source of estimated factor: COURLY PRODU Average push distar Unadjusted hourly production: Materials consistent description: Average push gradient: Average site altitude	Dur:	02.78 2S CCY <u>1 Foot or</u> Cat Hand <u>150 feet</u> <u>150 feet</u> Loose 6 100 feet	\$0.00 \$41.52	0 NA			
Cost/He Ripper op. Cost/He Operator Cost/He Total unit Cost/Hou Total Fleet Cost/Hou Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated factor: <b>COURLY PRODU</b> Average push distar Unadjusted hourly production: Materials consistened description: Average push gradient:	Dur:	02.78 2S LCY <u>1 Foot or</u> Cat Hand <u>150 feet</u> 212.5 LCY Loose 6	\$0.00 \$41.52	0 NA			

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	0.940	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8078

Adjusted unit production:	171.66 LCY/hr
Adjusted fleet production:	<b>514.98</b> LCY/hr

Fleet size:	3 Dozer(s)
Unit cost:	\$0.782/LCY

Total job time:	211.18 Hours
Total job cost:	\$85,061

# Task: P01

## Date: March 18, 2019

*Climax's estimate to remove 300,000 cubic yards of sediment from the lake

General	
Clearing and Grubbing	\$10,000
Haul Roads	\$30,000
Subtotal	\$40,000
Pre-Excavation Work and Water Management	
Diversions and Dewatering	\$379,070
Subtotal	\$379,070
Sediment and Subsoil Removal	
Develop Access into Robinson Lake	\$15,000
Develop Access into Fill Area	\$10,000
Excavate and Haul Sediments to Fill Area (300K cy)	\$1,620,000
Excavate, Haul and Place Native Materials (10% over-exc.)	\$162,000
Subtotal	\$1,807,000
Finish Work	
Final Re-contouring at Robinson Lake	\$45,000
Final Re-contouring at Fill Area	\$22,500
Regrade and Re-establish Cover on Face of 2-Dam to Pre-existing Condition	\$40,000
Subtotal	\$107,500
Total	\$2,333,570

Climax Mine, M-1977-493

# TRUCK/LOADER TEAM WORK

Task description:	5 Dam,	Load and Haul	Subson to site			
Site: Climax Mine	x Mine Permi		tion: March 2019		Permit/Job#: M197749	
PROJECT IDEN	<b><u><b>FIFICATION</b></u></b>					
Task #: Q01A	L	State: Colora	ado	Abb	previation: No	one
Date: 3/18/2	2019 C	County: Summ	nit		Filename: NA	4
User: JLE						
Agency or o	organization nam	ne: DRMS				
HOURLY EQUIP	MENT COST			Shift ba	sis: <u>1 per day</u>	
			Equipment Descr	iption		
Tr	ruck Loader Tear		740 T 950H			
Suppo	ort Equipment -Lo		D6T XL			
Suppo	1 1	mp Area: NA				
Road Ma	intenance – Moto		T 12M			
	-Wat		ter Tanker, 5,000	Gal.		
Cost Proskdorme		er Truck: Wa	ter Tanker, 5,000		Mainten	
<u>Cost Breakdown</u> :	Truck/Loa	er Truck: Wa der Team	ter Tanker, 5,000 Support	Equipment		ance Equipment
<u>Cost Breakdown</u> :		er Truck: Wa	ter Tanker, 5,000		Mainten Motor Grader	ance Equipment Water Truck
Cost Breakdown:	Truck/Loa	er Truck: Wa der Team	ter Tanker, 5,000 Support	Equipment	Motor	
5Utilization-machine:	Truck/Loa Truck	er Truck: Wa der Team Loader	ter Tanker, 5,000 Support Load Area	Equipment Dump Area	Motor Grader	Water Truck
Utilization-machine:	Truck/Loa Truck 100	er Truck: Wa der Team Loader 100	ter Tanker, 5,000 Support Load Area 100	Equipment Dump Area NA	Motor Grader 100	Water Truck
Utilization-machine: Ownership cost/hour:	Truck/Loa Truck 100 \$66.13	er Truck: Wa der Team Loader 100 \$26.14	ter Tanker, 5,000 Support Load Area 100 \$52.66	Equipment Dump Area NA NA	Motor Grader 100 \$30.73	Water Truck 100 \$25.30
Outilization-machine: Ownership cost/hour: Operating cost/hour:	Truck/Loa Truck 100 \$66.13 \$55.75	er Truck: Wa der Team Loader 100 \$26.14 \$30.84	ter Tanker, 5,000 Support Load Area 100 \$52.66 \$46.34	Equipment Dump Area NA NA NA	Motor Grader 100 \$30.73 \$30.60	Water Truck 100 \$25.30 \$36.60
Outilization-machine: Ownership cost/hour: Operating cost/hour: %Utilization-riper: Ripper own. cost/hour:	Truck/Loa Truck 100 \$66.13 \$55.75 NA	er Truck: Wa der Team Loader 100 \$26.14 \$30.84 0	ter Tanker, 5,000 Support Load Area 100 \$52.66 \$46.34 NA	Equipment Dump Area NA NA NA NA	Motor Grader 100 \$30.73 \$30.60 NA	Water Truck           100           \$25.30           \$36.60           NA
Outilization-machine: Ownership cost/hour: Operating cost/hour: %Utilization-riper: Ripper own. cost/hour:	Truck/Loa Truck 100 \$66.13 \$55.75 NA NA	er Truck: Wa der Team Loader 100 \$26.14 \$30.84 0 \$0.00	ter Tanker, 5,000 Support Load Area 100 \$52.66 \$46.34 NA \$0.00	Equipment Dump Area NA NA NA NA	Motor Grader 100 \$30.73 \$30.60 NA \$0.00	Water Truck           100           \$25.30           \$36.60           NA           \$0.00
OUtilization-machine: Ownership cost/hour: Operating cost/hour: %Utilization-riper: Ripper own. cost/hour: Ripper op. cost/hour:	Truck/Loa Truck 100 \$66.13 \$55.75 NA NA NA	er Truck: Wa der Team Loader 100 \$26.14 \$30.84 0 \$0.00 \$0.00	ter Tanker, 5,000 Support Load Area 100 \$52.66 \$46.34 NA \$0.00 \$0.00	Equipment Dump Area NA NA NA NA NA	Motor Grader 100 \$30.73 \$30.60 NA \$0.00 \$0.00	Water Truck 100 \$25.30 \$36.60 NA \$0.00 \$0.00
5 Utilization-machine: Ownership cost/hour: Operating cost/hour: % Utilization-riper: Ripper own. cost/hour: Ripper op. cost/hour: Operator cost/hour:	Truck/Loa Truck 100 \$66.13 \$55.75 NA NA NA NA \$31.17	er Truck: Wa der Team Loader 100 \$26.14 \$30.84 0 \$0.00 \$0.00 \$0.00 \$40.90	ter Tanker, 5,000 Support Load Area 100 \$52.66 \$46.34 NA \$0.00 \$0.00 \$41.52	Equipment Dump Area NA NA NA NA NA NA	Motor Grader 100 \$30.73 \$30.60 NA \$0.00 \$0.00 \$28.69	Water Truck 100 \$25.30 \$36.60 NA \$0.00 \$0.00 \$21.23

## **MATERIAL QUANTITIES**

Initial volume: Loose volume:	21,780 <b>21,780</b>	CCYSwell factor:1.000LCY	
Source of		6" over 27 acres, revised Feb. 2019 Climax Es Cat Handbook \$0.00 \$0.00	timate

Truck Capacity:	•				
Truck Payload (weight) Bas Material weight:	<u>2,650</u>	Pound			
Description:					
Rated Payload:	87,000	Pound			
Payload Capacity:	32.83	LCY	.5		
Tayload Capacity.	52.05				
Truck Bed (volume) Basis:					
Struck Volume:	24.20 L	.CY			
Heaped Volume:	31.40 L	.CY			
Average Volume:	27.80 L	.CY			
Adjusted Volume:	31.40 I	.CY			
Final	Truck Volume B	ased on Number of	Loader Passes	31.61	LCY
Loading Tool Capacity			204401 1 455051		
			Buck	tet Size Class: <u>N</u>	NA
Rated Capacity:	4.300	LCY (heaped)			
Bucket Fill Factor:	1.050	Other - moist lo	am (100-	-110%) 1.050	
Adjusted Capacity:	4.515	LCY			
Job Condition Corrections	<u>s:</u>	Si	te Altitude (ft.):	<u>10400</u> feet	
	Truck	Loader	Source		
Altitude Adj:	0.600	1.000	(CAT HE	<i>.</i>	
Job Efficiency:	0.830	0.830	(CAT HE	3)	
Net Correction:	0.498	0.830			
Loading Tool Cycle Time	<u>։</u> Nւ	mber of Loading T	ool Passes Requ		7 passes
Excavators and Front Shov	els:			Truck:	,
Machine Cycle Time Selected Value	vs. Job Condition within this Basic				
	- Material Descrip	<u> </u>			
Cycle Time Elements (min.)					
Load: NA	Ma	neuver: NA		Dump: 0.10	0
Wheel and Tra-	ck Loaders - Unad	justed Basic Loade	•	oad, dump, (naneuver):	0.500 minutes
Cycle Time Factors				Factor (min.)	Source
Material				0.020	(Cat HB)
Stockpile				0.020	(Cat HB)
Truck Ownership	Common own 0.04	ership of trucks and	l loaders -	-0.040	(Cat HB)
Operation		ation -0.04		-0.040	(Cat HB)
Dump Target				0.000	(Cat HB)
i U		Net Cycle Time	e Adjustment:	-0.040	minutes
		Adjusted Loade		0.460	minutes
		Net Load Ti	me per Truck:	2.860	minutes

#### Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	1.000	Minutes
Truck Load Time:	2.860	Minutes	Adjusted for site altitude:	2.860	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.667	Minutes

maintained 3.0

Truck Travel (Haul & Return) Time: Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2956.80	5.00	3.00	8.00	1123	2.754
2	10771.20	-7.00	3.00	-4.00	3005	3.695

Return Route:

Haul Time: 6.449 minutes

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	10771.20	7.00	3.00	10.00	1736	6.301
2	2956.80	-5.00	3.00	-2.00	3706	0.831

Return Time:	7.132	minutes
Total Truck Cycle Time:	19.108	minutes

Loading Tool unit						
Production	491.27	LCY/Hour	Adjusted for job ef	ficiency:	407.75	LCY/Hour
Truck Unit Production						
	99.24	LCY/Hour	Adjusted for job ef	ficiency:	82.37	_ LCY/Hour
Optimal No. of Trucks:	5	_ Truck(s)	Selected Number of	f Trucks:	5	Truck(s)
		Adjusted hour	rly truck team production:	411.86	LCY/H	Iour
	А	·	k/loader team production:	407.75	LCY/H	Iour
	Adj	usted multiple truc	k/loader team production:	407.75	LCY/H	Iour

Fleet size:	1	Team(s)	Total job time:	53.41	Hours
Unit cost:	\$2.886	/LCY	Total job cost:	\$62,859	

Climax Mine, M-1977-493

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# TRUCK/LOADER TEAM WORK

Task description:	5 Dam,	Load and haul t	opsoil to site			
Site: Climax Mine		Permit Act	ion: <u>March 201</u>	19	Permit/Job#:	M1977493
PROJECT IDENT	<b>TIFICATION</b>					
Task #: Q01B		State: Colora				lone
Date: 3/18/2	019 C	County: Summ	iit		Filename: N	ΙA
User: JLE						
Agency or o	organization nam	ne: DRMS				
HOURLY EQUIP	MENT COST	,		Shift ba	sis: <u>1 per day</u>	
<b>*</b>			Equipment Descr		<u></u>	
Tru	uck Loader Tear			iption		
		-Loader: CA	Г 950Н			
Suppor	t Equipment -Lo		D6T XL			
Dood Mai	-Du ntenance –Moto	mp Area: NA	Г 12М			
Koau Iviai			ter Tanker, 5,000	Gal		
				<u> </u>		
Cost Breakdown:	Truck/Loa	der Team	Support	Equipment	Mainte	nance Equipment
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	100	NA	100	100
Ownership cost/hour:	\$66.13	\$26.14	\$52.66	NA	\$30.73	\$ \$25.30
Operating cost/hour:	\$55.75	\$30.84	\$46.34	NA	\$30.60	\$36.60
%Utilization-riper:	NA	0	NA	NA	NA	NA
Ripper own. cost/hour:	NA	\$0.00	\$0.00	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	\$0.00	\$0.00	NA	\$0.00	\$0.00
Operator cost/hour:	\$31.17	\$40.90	\$41.52	NA	\$28.69	\$21.23
Unit Subtotals:	\$153.05	\$97.89	\$140.52	NA	\$90.02	\$83.13
Number of Units:	5	1	1	0	1	. 1
Group Subtotals:	Work:	\$863.14	Support:	\$140.52	Maint	\$173.15
Total work team cost/	hour: <u><b>\$1,176.8</b></u>	1	·		·	

## **MATERIAL QUANTITIES**

Initial volume: Loose volume:	21,780 <b>21,780</b>	CCY LCY	Swell factor:	1.000
	e of estimated volume:			Feb 2019 Estimate
Source of	estimated swell factor:	Cat Handbool	k	
Ν	Aaterial Purchase Cost:	\$0.00		
	Total Cost:	\$0.00		

Truck Capacity:						
Truck Payload (weight) Basi			D 1. /I	CV		
Material weight:	1,600 Top Soil		Pounds/L	LΥ		
Description: Rated Payload:	Top Soil		Pounds			
Payload Capacity:	87,000 54.38		LCY			
Payload Capacity.	34.38					
Truck Bed (volume) Basis:						
Struck Volume:	24.20	LCY				
Heaped Volume:	31.40	LCY				
Average Volume:	27.80	LCY				
Adjusted Volume:	31.40	LCY				
Final	Truck Volume	Based on Nu	umber of Lo	adar Passas.	31.61	LCY
Loading Tool Capacity	TTUCK VOIUIIIC	Dased off Ne		auer rasses.		
<u>Douting roor Cuptony</u>				Buck	et Size Class:	NA
Rated Capacity:	4.300		heaped)			
Bucket Fill Factor:	1.050	Other -	- moist loan	n (100-	110%) 1.050	
Adjusted Capacity:	4.515	LCY				
Job Condition Corrections	<u>:</u>		Site .	Altitude (ft.):	<u>10400</u> feet	
	Truck	Load	der	Source		
Altitude Adj:	0.600	1.00	00	(CAT HB	3)	
Job Efficiency:	0.830	0.83	30	(CAT HB	3)	
Net Correction:	0.498	0.83	30			
Loading Tool Cycle Time:		Number of L	oading Too	l Passes Requ	ired to Fill	7 passes
Excavators and Front Shove	<u>ls:</u>				Truck:	1
Machine Cycle Time v Selected Value			NA NA			
Track Loaders –			1111			
Cycle Time Elements (min.)						-
Load: NA	N	Ianeuver:	NA		Dump: 0.1	00
Wheel and Trac	k Loaders - Un	adjusted Bas	sic Loader C	•	oad, dump, naneuver):	0.500 minutes
Cycle Time Factors					Factor (min.)	Source
Material:	Mixed mate	rial 0.02			0.020	(Cat HB)
Stockpile:	Dumped by	truck 0.02			0.020	(Cat HB)
Truck Ownership:		wnership of t	rucks and lo	oaders -	-0.040	(Cat HB)
Operation:		eration -0.04			-0.040	(Cat HB)
Dump Target:	Nominal tar		•		0.000	(Cat HB)
	statiat tu	-	ycle Time A	diustment:	-0.040	minutes
			ed Loader C		0.460	minutes
			t Load Time		2.860	minutes

#### Truck Cycle Time:

Truck Exchange Time:	0.60	Minutes	Adjusted for site altitude:	1.000	Minutes
Truck Load Time:	2.860	Minutes	Adjusted for site altitude:	2.860	Minutes
Truck Maneuver and Dump Time:	1.00	Minutes	Adjusted for site altitude:	1.667	Minutes

maintained 3.0

Truck Travel (Haul & Return) Time: Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered,

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2956.80	5.00	3.00	8.00	1123	2.754
2	10771.20	-7.00	3.00	-4.00	3005	3.695

Return Route:

Haul Time: 6.449 minutes

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	10771.20	7.00	3.00	10.00	1736	6.301
2	2956.80	-5.00	3.00	-2.00	3706	0.831

Return Time:	7.132	minutes
Total Truck Cycle Time:	19.108	minutes

Loading Tool unit Production Truck Unit Production	491.27	LCY/Hour	Adjusted for job ef	ficiency:	407.75	LCY/Hour
	99.24	LCY/Hour	Adjusted for job ef	ficiency:	82.37	LCY/Hour
Optimal No. of Trucks:	5	Truck(s)	Selected Number of	Trucks:	5	Truck(s)
		Adjusted single truck	y truck team production: /loader team production: /loader team production:	411.86 407.75 <b>407.75</b>	LCY/H LCY/H LCY/H	Iour

Fleet size:	1	Team(s)	Total job time:	53.41	Hours
Unit cost:	\$2.886	/LCY	Total job cost:	\$62,859	

## BULLDOZER WORK

	F	Permit Action:	March 2019	Permit/Jo	b#: <u>M1977493</u>
<b>PROJECT IDENTIF</b>	<b>ICATION</b>				
Task #: Q02A	State:	Colorado		Abbreviation:	None
Date: 3/18/2019	County:	Summit		Filename:	NA
User: JLE					
Agency or orga	nization name: <u> </u>	ORMS			
IOURLY EQUIPME	ENT COST				
Basic Machine: Ca	at D8T - 8SU				
Horsepower: 31			-		
	emi-Universal		-		
Attachment: NA			-		
Shift Basis: 1	per day		=		
Data Source: (C	CRG)		-		
Cost Breakdown:			Utilization %		
Ownership Cost/Hour:		\$93.62	NA		
Operating Cost/Hour:		\$73.35	100		
Ripper own.					
Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.52	NA		
	-				
Tatal	¢209.40				
Total unit Cost/Hour:	\$208.49				
Total unit Cost/Hour: Total Fleet Cost/Hour:	\$208.49 <b>\$416.99</b>				
Total Fleet Cost/Hour:	\$416.99				
Total Fleet Cost/Hour: <b>//ATERIAL QUANT</b>	\$416.99				
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume:21,	<b>\$416.99</b> F <b>ITIES</b> 780				
Total Fleet Cost/Hour: <u>MATERIAL QUANT</u> Initial Volume: <u>21,</u> Swell factor: <u>1.00</u>	\$416.99 FITIES 780 00				
Total Fleet Cost/Hour: <u>MATERIAL QUANT</u> Initial Volume: <u>21,</u> Swell factor: <u>1.00</u>	<b>\$416.99</b> F <b>ITIES</b> 780				
Total Fleet Cost/Hour:         MATERIAL QUANT         Initial Volume:       21,'         Swell factor:       1.00         Loose volume:       21,'         Source of estimated vol	\$416.99 FITIES 780 00 780 LCY lume: 6" Over		  . Feb 2019 Climax Est	timate	
Total Fleet Cost/Hour:         MATERIAL QUANT         Initial Volume:       21,         Swell factor:       1.00         Loose volume:       21,         Source of estimated vol       Source of estimated swell	\$416.99 FITIES 780 00 780 LCY lume:6" Over		. Feb 2019 Climax Est	timate	
Total Fleet Cost/Hour:         MATERIAL QUANT         Initial Volume:       21,'         Swell factor:       1.00         Loose volume:       21,'         Source of estimated vol	\$416.99 FITIES 780 00 780 LCY lume: 6" Over		 . Feb 2019 Climax Est	timate	
Total Fleet Cost/Hour:         MATERIAL QUANT         Initial Volume:       21,         Swell factor:       1.00         Loose volume:       21,         Source of estimated vol       Source of estimated swell	\$416.99 FITIES 780 00 780 LCY lume: 6" Over		 . Feb 2019 Climax Est	timate	
Total Fleet Cost/Hour:         MATERIAL QUANT         Initial Volume:       21,         Swell factor:       1.00         Loose volume:       21,         Source of estimated vol       Source of estimated swell	\$416.99 <u>FITIES</u> 780 00 780 LCY lume: <u>6" Over</u> ell Cat Har		 . Feb 2019 Climax Est	timate	
Total Fleet Cost/Hour:         MATERIAL QUANT         Initial Volume:       21,'         Swell factor:       1.00         Loose volume:       21,'         Source of estimated vol       Source of estimated swell         Source of estimated swell       Swell factor:         HOURLY PRODUCT       100	\$416.99 <u>FITIES</u> 780 00 780 LCY lume: <u>6" Over</u> ell Cat Har <u>FION</u>		 . Feb 2019 Climax Est	timate	
Total Fleet Cost/Hour:         MATERIAL QUANT         Initial Volume:       21,'         Swell factor:       1.00         Loose volume:       21,'         Source of estimated vol       Source of estimated swafactor:         HOURLY PRODUCT       Average push distance:	\$416.99 <u>FITIES</u> 780 00 780 LCY lume: <u>6" Over</u> ell <u>Cat Har</u> <u>TION</u> <u>250 feet</u>	ndbook	 . Feb 2019 Climax Est	timate	
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 21, Swell factor: 1.00 Loose volume: 21, Source of estimated vol Source of estimated vol Source of estimated swe factor: HOURLY PRODUCT Average push distance: Unadjusted hourly	\$416.99 <u>FITIES</u> 780 00 780 LCY lume: <u>6" Over</u> ell Cat Har <u>FION</u>	ndbook	 . Feb 2019 Climax Est	timate	
Total Fleet Cost/Hour:         MATERIAL QUANT         Initial Volume:       21,'         Swell factor:       1.00         Loose volume:       21,'         Source of estimated vol       Source of estimated swafactor:         HOURLY PRODUCT       Average push distance:	\$416.99 <u>FITIES</u> 780 00 780 LCY lume: <u>6" Over</u> ell <u>Cat Har</u> <u>TION</u> <u>250 feet</u>	ndbook	 . Feb 2019 Climax Est	timate	
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 21, Swell factor: 1.00 Loose volume: 21, Source of estimated vol Source of estimated vol Source of estimated swe factor: HOURLY PRODUCT Average push distance: Unadjusted hourly production:	\$416.99         CITIES         780         00         780 LCY         lume:       6" Over         ell       Cat Har	ndbook Y/hr	 . Feb 2019 Climax Est	timate	
Total Fleet Cost/Hour:         MATERIAL QUANT         Initial Volume:       21,'         Swell factor:       1.0'         Loose volume:       21,'         Source of estimated vol       21,'         Source of estimated vol       21,'         Source of estimated vol       Source of estimated swell         Gource of estimated swell       100'         Average push distance:       Unadjusted hourly         production:       Materials consistency	\$416.99         CITIES         780         00         780 LCY         lume:       6" Over         ell       Cat Har	ndbook	 . Feb 2019 Climax Est	<u>timate</u>	
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 21, Swell factor: 1.00 Loose volume: 21, Source of estimated vol Source of estimated vol Source of estimated swe factor: HOURLY PRODUCT Average push distance: Unadjusted hourly production:	\$416.99         CITIES         780         00         780 LCY         lume:       6" Over         ell       Cat Har	ndbook Y/hr	 . Feb 2019 Climax Est	timate	
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 21, Swell factor: 1.00 Loose volume: 21, Source of estimated vol Source of estimated vol Source of estimated swe factor: HOURLY PRODUC? Average push distance: Unadjusted hourly production: Materials consistency description:	\$416.99 <u>FITIES</u> 780         00         780 LCY         lume:       6" Over         ell       Cat Har	ndbook Y/hr	 . Feb 2019 Climax Est	timate	
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 21, Swell factor: 1.00 Loose volume: 21, Source of estimated vol Source of estimated vol Source of estimated swe factor: HOURLY PRODUC? Average push distance: Unadjusted hourly production: Materials consistency description: Average push	\$416.99         CITIES         780         00         780 LCY         lume:       6" Over         ell       Cat Har	ndbook Y/hr	 . Feb 2019 Climax Est 	timate	
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 21, Swell factor: 1.00 Loose volume: 21, Source of estimated vol Source of estimated vol Source of estimated swe factor: HOURLY PRODUCT Average push distance: Unadjusted hourly production: Materials consistency description: Average push gradient:	\$416.99 <b>TITIES</b> 780         00 <b>780</b> LCY         lume:       6" Over         ell       Cat Har <b>TION</b> 250 feet         377.8 LC         Loose         0 %	ndbook Y/hr	 . Feb 2019 Climax Est	timate	
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 21, Swell factor: 1.00 Loose volume: 21, Source of estimated vol Source of estimated vol Source of estimated swe factor: HOURLY PRODUC? Average push distance: Unadjusted hourly production: Materials consistency description: Average push	\$416.99 <u>FITIES</u> 780         00         780 LCY         lume:       6" Over         ell       Cat Har	ndbook Y/hr	 . Feb 2019 Climax Est	timate	
Weight description: Decomposed rock - 25% Rock, 75% Earth

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5187

Adjusted unit production:	195.96 LCY/hr		
Adjusted fleet production:	<b>391.92</b> LCY/hr		

# JOB TIME AND COST

Fleet size:	2 Dozer(s)
Unit cost:	\$1.064/LCY

 Total job time:
 55.57 Hours

 Total job cost:
 \$23,173

### BULLDOZER WORK

	Permit Action	m: March 2019	Permit/Jo	b#: <u>M1977493</u>
PROJECT IDENTIFI Task #: Q02B Date: 3/18/2019 User: JLE	CATION State: Colorado County: Summit	<u>.</u>	Abbreviation: Filename:	None NA
Agency or organ	ization name: DRMS			
HOURLY EQUIPME	<u>NT COST</u>			
Horsepower: 310 Blade Type: Sen Attachment: NA	ni-Universal er day			
Cost Breakdown:		Utilization %		
Ownership Cost/Hour:	\$93.62	NA		
Operating Cost/Hour:	\$73.35	100		
Ripper own. Cost/Hour:	\$0.00	NA		
Ripper op. Cost/Hour:	\$0.00	0		
Operator Cost/Hour:	\$41.52	NA		
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 21,7 Swell factor: 1.00	80			
		ec. Feb 2019 Climax Esti	mate	
Loose volume: 21,7	ll Cat Handbook	ec. Feb 2019 Climax Esti	mate	
Loose volume: 21,7 Source of estimated volu Source of estimated swel factor:	ll Cat Handbook	ec. Feb 2019 Climax Esti	mate	
Loose volume: 21,7 Source of estimated volu Source of estimated swe factor: HOURLY PRODUCT Average push distance: Unadjusted hourly	II Cat Handbook ION 250 feet		mate	
Loose volume: 21,7 Source of estimated volu Source of estimated swe factor: HOURLY PRODUCT Average push distance: Unadjusted hourly production: Materials consistency	II Cat Handbook ION 250 feet 377.8 LCY/hr		mate	
Loose volume: 21,7 Source of estimated volu Source of estimated swel factor: HOURLY PRODUCT Average push distance: Unadjusted hourly production: Materials consistency description: Average push	II Cat Handbook ION 250 feet 377.8 LCY/hr Loose stockpile 1.		mate	

Weight description: Top	Soil	
Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)
Net correction:	0.8593	
Adjusted unit 32 production:	24.64 LCY/hr	
Adjusted fleet	10 28 I CV/hr	

649.28 LCY/hr

production:

Fleet size:	2 Dozer(s)
Unit cost:	\$0.642/LCY

Total job time:	33.54 Hours
Total job cost:	\$13,988

# **REVEGETATION WORK**

Т	Task description:   Revegetation, Seeding Standard Mixture						
Site:	Climax M	ſine	P	ermit Action:	March 2019	Permit/Jo	b#: M1977493
<u>PI</u>		IDENTIFIC		Colorada		Abbrovistion	None
	Task #:	R01	State:	Colorado		Abbreviation:	None
	Date:	3/18/2019	County:	Summit		Filename:	NA
	User:	JLE					
	Age	ency or organiz	zation name:	RMS			

# **FERTILIZING**

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			\$	\$
			Total Fertilizer	
			Materials Cost/Acre	\$0.00

### Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

# **TILLING**

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$106.29
Total Tilling Cost/Acre	\$106.29

# **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alpine Bluegrass	0.11	2.53	\$1.46
Arizona Fescue - Redondo	0.45	5.17	\$5.45
Mountain Brome - Bromar	1.70	2.73	\$7.57
Cinquefoil, Slender	0.04	3.90	\$17.18
Currant, Wax	0.16	0.55	\$9.72
Rocky Mountain Fescue	0.17	2.73	\$1.08
Lupine, Silver	1.74	1.02	\$124.67
Slender Wheatgrass - Native	0.68	2.48	\$1.96
Vetch, American	1.33	0.60	\$136.09
Flax, Lewis Blue	0.45	2.99	\$7.61
Spike Muhly	0.09	3.31	\$0.89

Timothy - Climax	0.25	7.17	\$0.40
Tufted Hairgrass	0.17	9.76	\$1.86
Penstemon, Rocky Mountain	0.27	4.23	\$8.16
Yarrow, Western	0.05	3.04	\$2.14
Totals Seed Mix	7.66	52.20	\$326.23

#### Application

Description		Cost /Acre
Drill Seeding (DRMS Survey Cost)		\$232.00
	<b>Total Seed Application Cost/Acre</b>	\$232.00

### **MULCHING and MISCELLANEOUS**

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$288.00	\$576.00
Total Mulch Materials Cost/Acre				\$576.00

### Application

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$68.78
Power mulcher (MEANS 32 91 13.16 0350)		\$92.78
	Total Mulch Application Cost/Acre	\$161.56

#### **NURSERY STOCK PLANTING**

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
	Totals Nursery Stock Cost / Acre				

No. of Acres:	1466	Cost /Acre:	\$1,402.08
Estimated Failure Rate:	10%	Cost /Acre*:	\$558.23
*Selected Replanting Work Items:	SEEDING		
Initial Job Cost: <b>\$2,055,449.28</b> Reseeding Job Cost: <b>\$81,836.52</b>			

Reseeding Job Cost:	\$81,836.52
Total Job Cost:	\$2,137,286
Job Hours:	1,466.00

# **REVEGETATION WORK**

te: Climax	Mine	Pe	rmit Action:	March 2019	Permit/Jo	b#: <u>M1977493</u>
PROJECT	<u>IDENTIFI</u>	<u>CATION</u>				
Task #: Date:		State: County:	Colorado Summit		Abbreviation: Filename:	None NA
User:	JLE				-	

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			\$	\$
			Total Fertilizer Materials	
			Cost/Acre	\$0.00

#### Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

### TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$106.29
Total Tilling Cost/Acre	\$106.29

# **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alpine Bluegrass	0.22	5.05	\$2.93
Arizona Fescue - Redondo	0.90	10.33	\$10.91
Mountain Brome - Bromar	3.40	5.46	\$15.13
Cinquefoil, Slender	0.08	7.80	\$34.37
Currant, Wax	0.32	1.10	\$19.43
Rocky Mountain Fescue	0.34	5.46	\$2.15
Lupine, Silver	3.48	2.04	\$249.34
Slender Wheatgrass - Native	1.36	4.96	\$3.92
Vetch, American	2.66	1.20	\$272.17
Flax, Lewis Blue	0.90	5.97	\$15.21
Spike Muhly	0.18	6.61	\$1.77

Timothy - Climax	0.50	14.35	\$0.80
Tufted Hairgrass	0.34	19.51	\$3.73
Penstemon, Rocky Mountain	0.54	8.46	\$16.31
Yarrow, Western	0.10	6.08	\$4.28
Totals Seed Mix	15.32	104.40	\$652.45

#### Application

Description		Cost /Acre
Hydro seeding (MEANS 32 92 19.14 0200)		\$919.12
	Total Seed Application Cost/Acre	\$919.12

### **MULCHING and MISCELLANEOUS**

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hydromulch, 1 ton/ac. rate {Materials Only}	1.00	ACRE	\$496.58	\$496.58
Total Mulch Materials Cost/Acre				\$496.58

#### Application

Description		Cost /Acre
Hydromulching (MEANS 32 92 19.13 1100)		\$629.20
	<b>Total Mulch Application Cost/Acre</b>	\$629.20

### **NURSERY STOCK PLANTING**

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
	Totals Nursery Stock Cost / Acre				\$0.00

No. of Acres:	263	Cost /Acre:	\$2,803.64
Estimated Failure Rate:	10%	Cost /Acre*:	\$1,571.57
*Selected Replanting Work Items:	SEEDING		·
Initial Job Cost: <b>\$737,357.32</b>			
Reseeding Job Cost: \$41,332.29			
Total Job Cost: \$778,690			
Job Hours: <b>263.00</b>			

# **REVEGETATION WORK**

Т	ask descrip	otion:	Revegetation, So	eeding Alpin	e		
Site:	Climax M	Iine	Pe	rmit Action:	March 2019	Permit/Jo	b#: <u>M1977493</u>
PF	<b>ROJECT</b> Task #:	IDENTIFIC R03	CATION State:	Colorado		Abbreviation:	None
	Date:	3/18/2019	County:	Summit		Filename:	NA
	User:	JLE					
	Age	ency or organiz	zation name: DF	RMS			

# **FERTILIZING**

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			\$	\$
			Total Fertilizer	
			Materials Cost/Acre	\$0.00

### Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/	Acre \$0.00

### TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$106.29
Total Tilling Cost/Acre	\$106.29

# **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alpine Bluegrass	0.22	5.05	\$2.93
Alpine Fescue	0.65	19.40	\$11.60
Cinquefoil, Slender	0.03	2.92	\$12.89
Currant, Wax	0.20	0.69	\$12.15
Rocky Mountain Fescue	0.34	5.46	\$2.15
Lupine, Silver	0.35	0.21	\$25.08
Slender Wheatgrass - Native	1.37	5.00	\$3.95
Flax, Lewis Blue	0.43	2.85	\$7.27
Spike Muhly	0.09	3.31	\$0.89
Timothy, Alpine - Native	0.17	5.07	\$4.21
Tufted Hairgrass	0.17	9.76	\$1.86

Yarrow, Western	0.05	3.04	\$2.14
		62.76	
Totals Seed Mix	4.07	62.76	\$87.10

#### Application

Description		Cost /Acre
Drill Seeding (DRMS Survey Cost)		\$232.00
	Total Seed Application Cost/Acre	\$232.00

# **MULCHING and MISCELLANEOUS**

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$288.00	\$576.00
<b>Total Mulch Materials Cost/Acre</b>				\$576.00

Application

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$68.78
Power mulcher (MEANS 32 91 13.16 0350)		\$92.78
	Total Mulch Application Cost/Acre	\$161.56

#### **NURSERY STOCK PLANTING**

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
Totals Nursery Stock Cost / Acre				\$0.00	

No. of Acres:	227	Cost /Acre:	\$1,162.95
Estimated Failure Rate:	10%	Cost /Acre*:	\$319.10
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$263,989.65
Reseeding Job Cost:	\$7,243.57
Total Job Cost:	\$271,233
Job Hours:	227.00

# **REVEGETATION WORK**

Climax N	Aine	Per	rmit Action:	March 2019	Permit/Jo	b#: <u>M1977493</u>
<u>KOJECT</u>	IDENTIFICAT	<u>FION</u>				
Toole #1	R04	State:	Colorado		Abbreviation:	None
Task #:	110.					
Date:	3/18/2019	County:	Summit		Filename:	NA

# **FERTILIZING**

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			\$	\$
			Total Fertilizer	
			Materials Cost/Acre	\$0.00

### Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Acre	\$0.00

### TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$106.29
Total Tilling Cost/Acre	\$106.29

# **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alpine Bluegrass	0.44	10.10	\$5.86
Alpine Fescue	1.30	38.80	\$23.19
Cinquefoil, Slender	0.06	5.85	\$25.77
Currant, Wax	0.40	1.38	\$24.29
Rocky Mountain Fescue	0.68	10.93	\$4.30
Lupine, Silver	0.70	0.41	\$50.16
Slender Wheatgrass - Native	2.74	10.00	\$7.89
Flax, Lewis Blue	0.86	5.70	\$14.53
Spike Muhly	0.18	6.61	\$1.77
Timothy, Alpine - Native	0.34	10.15	\$8.42
Tufted Hairgrass	0.34	19.51	\$3.73

Yarrow, Western	0.10	6.08	\$4.28
		105 50	
Totals Seed Mix	8.14	125.52	\$174.20

#### Application

Description		Cost /Acre
Hydro seeding (MEANS 32 92 19.14 0200)		\$919.12
	Total Seed Application Cost/Acre	\$919.12

# **MULCHING and MISCELLANEOUS**

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hydromulch, 1 ton/ac. rate {Materials Only}	1.00	ACRE	\$496.58	\$496.58
Total Mulch Materials Cost/Acre				\$496.58

Application

Description		Cost /Acre
Hydromulching (MEANS 32 92 19.13 1100)		\$629.20
	Total Mulch Application Cost/Acre	\$629.20

# NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
		Totals 1	Nursery Stoc	k Cost / Acre	\$0.00

No. of Acres:	475	Cost /Acre:	\$2,325.39
Estimated Failure Rate:	10%	Cost /Acre*:	\$1,093.32
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$1,104,560.25
Reseeding Job Cost:	\$51,932.70
Total Job Cost:	\$1,156,493
Job Hours:	475.00

# **REVEGETATION WORK**

1	ask descrip	otion:	Revegetation, Seeding -	Wetland		
Site:	Climax N	line	Permit Acti	on: March 2019	Permit/Jo	b#: <u>M1977493</u>
<u>P</u> ]	ROJECT	IDENTIFI	ICATION			
	Task #: Date: User:	R05 3/18/2019 JLE	State:         Colora           County:         Summing		Abbreviation: Filename:	None NA
	Age	ency or organ	nization name: DRMS			
F	ERTILIZ	ING				

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			\$	\$
			Total Fertilizer Materials	
			Cost/Acre	\$0.00

# Application

Description		Cost /Acre
		\$
	Total Fertilizer Application Cost/Acre	\$0.00

### **TILLING**

Description	Cost /Acre
	\$
Total Tilling Cost/Acre	\$0.00

### **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Aquatic Sedge	0.38	10.05	\$68.10
Black Sedge	0.44	3.92	\$194.87
Merten's Rush	0.00	1.47	\$0.59
Cinquefoil, Slender	0.24	23.40	\$103.10
Mannagrass, Northwest	0.22	1.83	\$2.33
Elephant Head	0.16	4.02	\$79.87
Reedgrass, Canadian (or Blue Joint)	0.12	12.34	\$25.05
Reedgrass, Northern - Native	0.18	18.51	\$24.93
Larkspur, Showy	0.18	2.28	\$8.48
Timothy, Alpine - Native	0.40	11.94	\$9.90
Tufted Hairgrass	0.26	14.92	\$2.85
Monkey Flower	0.24	24.44	\$35.88
Totals Seed Mix	2.82	129.12	\$555.93

Application

Description		Cost /Acre
Broadcast seeding [DMG]		\$267.22
	Total Seed Application Cost/Acre	\$267.22

### **MULCHING and MISCELLANEOUS**

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

Description		
		\$
	<b>Total Mulch Application Cost/Acre</b>	\$0.00

### **NURSERY STOCK PLANTING**

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
					\$
		Totals	Nursery Stoc	ek Cost / Acre	\$0.00

	No. of Acres:	25	Cost /Acr	e: \$823.15
Estimate	ed Failure Rate:	10%	Cost /Acre	*: \$823.15
*Selected Replanti	ng Work Items:	SEEDING		
Initial Job Cost:	\$20,578.75			
Reseeding Job Cost:	\$2,057.88		-	
Total Job Cost:	\$22,637		-	
Job Hours:	25.00		-	

# SAFEGUARDING UNDERGROUND OPENINGS

Task desc	cription:	Seal Undergr	ound Mine C	Dpening			
Climax M	Aine	Pe	ermit Action:	March 2019	Р	ermit/Job#:	M1977493
<u>PROJEC</u>	<u>T IDENTIFI</u>	<u>CATION</u>					
Task #:	S01	State:	Colorado		Abbreviation:	None	
Date: User:	3/18/2019 JLE	County:	Summit		Filename:	NA	
	Climax M PROJEC Task #: Date:	Task S01 #: Date: 3/18/2019	Climax Mine       Pe         PROJECT IDENTIFICATION       Prove the second	Climax Mine       Permit Action:         PROJECT IDENTIFICATION       State:       Colorado         #:	Climax Mine       Permit Action:       March 2019         PROJECT IDENTIFICATION         Task       S01       State:       Colorado         #:	Climax Mine       Permit Action:       March 2019       F         PROJECT IDENTIFICATION       March 2019       F         Task       S01       State:       Colorado       Abbreviation:         #:	Climax Mine       Permit Action:       March 2019       Permit/Job#:         PROJECT IDENTIFICATION       State:       Colorado       Abbreviation:       None         #:

### **UNIT COSTS**

Opening Description	Dimensions	Closure Method	Quantity	Unit	Unit Cost	Total Cost
Storke Portal	12' x14'	Shaft closure - concrete cap, poured- in-place (per Cubic Feet)	336.00	CF	\$3.89	\$1,307.04
Seal No. 3 Gallery	8' x 8'	Shaft closure - concrete cap, poured- in-place (per Cubic Feet)	128.00	CF	\$3.89	\$497.92

Job Hours: ______ 30.00

Total Cost: \$1,804.96

Climax Mine, M-1977-493

# EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description:	Mo	bilization - Year	•1				
e: Climax Mine		Permit	Action: Marc	h 2019		Permit/Job#: <u>N</u>	11977493
PROJECT IDE	NTIFICATI	<u>ON</u>					
Task #: T0	1	State: Co	olorado		Abbre	eviation: None	
	8/2019	County: Su	ımmit		Fi	lename: NA	
User: JLI	Ξ						
Agency	or organizatior	n name: DRMS					
EQUIPMENT 1	<b>FRANSPOR</b>	<u>T RIG COST</u>					
Truck	c Tractor Desc	ription: GENE	RIC ON-HIGH		Shift ba Cost Data Sour UCK TRACT(	<u>1</u>	ta
		-		400 HI	P (2ND HALF,	2006)	
Truc	k Trailer Desc	ription: G				ROP DECK EQU	IPMENT
			]	<b>FRAILER</b>	a (25T, 50T, AN	ND 100T)	
Cost Breakdown:							
		0.25 Tama	26 50 Tama	51	Tama		
Available Rig C	apacifies	0-25 Tons \$16.63	<b>26-50 Tons</b> \$18.37		+ <b>Tons</b> 522.33		
	g Cost/Hour:	\$10.03	\$46.13		522.55 50.07		
	r Cost/Hour:	\$27.66	\$27.66		527.66		
	r Cost/Hour:	\$0.00	\$25.39		525.39		
	t Cost/Hour:	\$88.67	\$117.55		125.45		
Total Oli		φ00 <b>.</b> 07	ψ117.55	Ψ	123.13		
NON ROADAB	LE EQUIPN	MENT:					
Machine	Weight/	Owner ship	Haul Rig	Fleet	Haul Trip	Return Trip	DOT Permit
Description	Unit (TONS)	Cost/hr/ unit	Cost/hr/unit	Size	Cost/hr/ fleet	Cost/hr/ fleet	Cost/ fleet
Cat 740	(TONS) 36.49	\$66.13	\$117.55	15	\$2,755.20	\$1,763.25	\$3,750.00
CAT 950H	20.13	\$26.14	\$88.67	3	\$344.43	\$266.01	\$750.00
Cat D6T XL	23.25	\$52.66	\$88.67	3	\$423.99	\$266.01	\$750.00
Cat D8T - 8SU	53.08	\$102.55	\$125.45	4	\$912.00	\$501.80	\$1,000.00
Cat D9T - 9SU	66.13	\$123.06	\$125.45	4	\$994.04	\$501.80	\$1,000.00
Cat D7R DS	34.57	\$66.14	\$117.55	5	\$918.45	\$587.75	\$1,250.00
Series II LGP	02.21	¢145.47	¢105.45	1	¢070.00	¢105.45	¢250.00
Cat D10T - 10SU	93.31 16.01	\$145.47	\$125.45 \$88.67	1 3	\$270.92 \$358.20	\$125.45 \$266.01	\$250.00 \$750.00
CAT 12M Trash pump -	0.80	\$30.73 \$6.59	\$88.67 \$88.67	3 1	\$358.20	\$266.01 \$88.67	\$750.00
70MT, 6 in.	0.00	ψυ.σγ	φ00.07	1	ψ75.20	ψ00.07	φ250.00
Drill/Broadcast	25.00	\$15.54	\$88.67	4	\$416.84	\$354.68	\$1,000.00
Seeder with							
Tractor Dower Mulabar	6.00	\$9.22	¢00 67	2	\$104.00	\$177.24	\$500.00
Power Mulcher (Bowie LD-90)	6.00	\$8.33	\$88.67	2	\$194.00	\$177.34	\$200.00
Broderson IC-250	- 14.38	\$19.37	\$88.67	3	\$324.12	\$266.01	\$750.00
3B, 61', 16.3MT CAT 963D	22.29	\$50.51	\$88.67	3	\$417.54	\$266.01	\$750.00
CAI 903D	22.29	\$30.31	Φ00.U/	5	\$417.34	\$200.01	\$730.00

Subtotals: **\$8,424.99 \$5,430.79 \$12,750.00** 

#### **ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/	Fleet Size	Haul Trip	Return Trip
	unit		Cost/hr/ fleet	Cost/hr/ fleet
Water Tanker, 5,000 Gal.	\$83.13	3	\$249.39	\$249.39
Fuel Tanker, 6x4, 210 HP	\$59.64	4	\$238.56	\$238.56
Light Duty Pickup, 4x4, 3/4 T.	\$77.14	5	\$385.70	\$385.70
Generic 12-18 cy, 6x4	\$97.40	6	\$584.40	\$584.40
		Subtotals:	\$1,458.05	\$1,458.05

#### **EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region:	DENVER	
Total one-way travel distance:	88.00	miles
Average Travel Speed:	65.00	mph
Total Non-Roadable Mob/Demob Cost *	\$332,616.87 \$3,947.95	

Transportation Cycle Time:

	Non-	
	Roadable	Roadable
	Equipment	Equipment
Haul Time (Hours):	1.35	1.35
Return Time (Hours):	1.35	1.35
Loading Time (Hours):	8.00	NA
Unloading Time (Hours):	8.00	NA
Subtotals:	18.71	2.71

#### JOB TIME AND COST

Total job time:	37.42	Hours

Total job cost: \$336,565

Climax Mine, M-1977-493

# EQUIPMENT MOBILIZATION/DEMOBILIZATION

PROJECT IDENTIFICATION         Task #:       T02         State:       Colorado         Abbreviation:       None	3-T02 ay ata L POWERED,	
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	3-T02 ay ata L POWERED,	
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$\begin{array}{c c c c c c c c c c c c c c c c c c c $	3-T02 ay ata L POWERED,	
User:JLEAgency or organization name:DRMSEQUIPMENT TRANSPORT RIG COSTShift basis:1 per d Cost Data Source:CRG DTruck Tractor Description:GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESE 400 HP (2ND HALF, 2006)Truck Trailer Description:GENERIC FOLDING GOOSENECK, DROP DECK EQU TRAILER (25T, 50T, AND 100T)Cost Breakdown:Available Rig Capacities0-25 Tons26-50 Tons51+ Tons Operating Cost/Hour:\$16.63\$18.37\$22.33Ownership Cost/Hour:\$16.63\$18.37\$22.33Operating Cost/Hour:\$16.63\$18.37\$22.33Operating Cost/Hour:\$16.63\$18.37\$22.33Operating Cost/Hour:\$16.63\$18.37\$22.33Operating Cost/Hour:\$16.63\$18.37\$22.33Operating Cost/Hour:\$16.63\$18.37\$22.33Operating Cost/Hour:\$16.63\$18.37\$22.33Operating Cost/Hour:\$27.66\$27.66\$27.66Helper Cost/Hour:\$88.67\$117.55\$125.45NON ROADABLE EQUIPMENT:MachineWeight/ Unit Cost/hr/unitMaul Rig Cost/hr/unitFleet Return Trip Cost/hr/left fleetCat 74036.49\$66.13\$117.5515\$2.755.20\$1,763.25Cat 74036.49\$66.13\$	ataL POWERED,	
EQUIPMENT TRANSPORT RIG COSTShift basis: 1 per d Cost Data Source: CRG D CRG DTruck Tractor Description:GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESE 400 HP (2ND HALF, 2006)Truck Trailer Description:GENERIC FOLDING GOOSENECK, DROP DECK EQU TRAILER (25T, 50T, AND 100T)Cost Breakdown:Available Rig Capacities0-25 Tons26-50 Tons51+ Tons \$125.33Ownership Cost/Hour: \$16.63\$18.37\$22.33 \$52.66Operating Cost/Hour:\$16.63\$18.37\$22.33 	ataL POWERED,	
$\begin{array}{c} \begin{array}{c} & \end{array} \\ & \end{array} \\ \hline \\$	ataL POWERED,	
$\begin{array}{c} \begin{array}{c} & \end{array} \\ & \end{array} \\ \hline \\$	ataL POWERED,	
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	ataL POWERED,	
400 HP (2ND HALF, 2006)         GENERIC FOLDING GOOSENECK, DROP DECK EQU         Truck Trailer Description:         GENERIC FOLDING GOOSENECK, DROP DECK EQU         TRAILER (25T, 50T, AND 100T)         Cost Breakdown:         Available Rig Capacities       0-25 Tons       26-50 Tons       51+ Tons         Ownership Cost/Hour:       \$16.63       \$18.37       \$22.33         Operating Cost/Hour:       \$44.38       \$46.13       \$50.07         Operator Cost/Hour:       \$27.66       \$27.66       \$27.66         Helper Cost/Hour:       \$88.67       \$\$125.45         Machine       Weight/       Owner ship       Cost/hr/unit       Cost/hr/unit       Cost/hr/ fleet         Machine       Weight/       Owner ship       Cost/hr/unit       Size       Cost/hr/ fleet         Cost/hr/unit       Cost/hr/unit       Size       Cost/hr/ fleet         Machine       Weight/ <th colsp<="" td=""><td></td></th>	<td></td>	
GENERIC FOLDING GOOSENECK, DROP DECK EQU         Truck Trailer Description:         GENERIC FOLDING GOOSENECK, DROP DECK EQU         TRAILER (25T, 50T, AND 100T)         Cost Breakdown:         Available Rig Capacities       0-25 Tons       26-50 Tons       51+ Tons         Ownership Cost/Hour:       \$16.63       \$18.37       \$22.33         Operating Cost/Hour:       \$44.38       \$46.13       \$50.07         Operator Cost/Hour:       \$27.66       \$27.66       \$27.66         Helper Cost/Hour:       \$0.00       \$25.39       \$25.39         Total Unit Cost/Hour:       \$88.67       \$117.55       \$125.45         Machine       Weight/       Owner ship       Haul Rig       Fleet       Haul Trip       Return Trip         Description       Unit       Cost/hr/ unit       Cost/hr/unit       Size       Cost/hr/       Cost/hr/         Cat 740       36.49       \$66.13       \$117.55       15       \$2,755.20       \$1,763.25         Cat 740       36.49       \$66.13       \$117.55       15       \$2,755.20       \$1,763.25         Cat 740       36.49       \$66.13       \$117.55       15       \$2,755.20	JIPMENT	
TRAILER (25T, 50T, AND 100T)           Cost Breakdown:         TRAILER (25T, 50T, AND 100T)           Available Rig Capacities         0-25 Tons         26-50 Tons         51+ Tons           Ownership Cost/Hour:         \$16.63         \$18.37         \$22.33           Operating Cost/Hour:         \$44.38         \$46.13         \$50.07           Operator Cost/Hour:         \$27.66         \$27.66         \$27.66           Helper Cost/Hour:         \$0.00         \$25.39         \$25.39           Total Unit Cost/Hour:         \$88.67         \$117.55         \$125.45           NON ROADABLE EQUIPMENT:         Haul Rig Cost/hr/unit         Fleet Cost/hr/ Cost/hr/unit         Haul Trip Cost/hr/ fleet         Return Trip Cost/hr/ fleet           Cat 740         36.49         \$66.13         \$117.55         \$15         \$2,755.20         \$1,763.25           CAT 950H         20.13         \$26.14         \$88.67         3         \$344.43         \$266.01           Cat D6T XL         23.25         \$52.66         \$88.67         3         \$423.99         \$266.01           Cat D6T XL         23.08         \$102.55         \$125.45         4         \$912.00         \$501.80	JIPMENI	
Machine         Weight/ Unit (TONS)         Owner ship Status         Owner ship Status         Owner ship Status         Owner ship Status         Owner ship Status         Status         Status <td></td>		
Available Rig Capacities         0-25 Tons         26-50 Tons         51+ Tons           Ownership Cost/Hour:         \$16.63         \$18.37         \$22.33           Operating Cost/Hour:         \$44.38         \$46.13         \$50.07           Operator Cost/Hour:         \$27.66         \$27.66         \$27.66           Helper Cost/Hour:         \$0.00         \$25.39         \$25.39           Total Unit Cost/Hour:         \$88.67         \$117.55         \$125.45           NON ROADABLE EQUIPMENT:         Veight/         Owner ship Cost/hr/ unit         Haul Rig Cost/hr/unit         Fleet Cost/hr/ fleet         Haul Trip Cost/hr/ fleet         Return Trip Cost/hr/ fleet           Machine Description         Weight/ Unit (TONS)         Owner ship Cost/hr/ unit         Size         Cost/hr/ fleet         Cost/hr/ fleet           Cat 740         36.49         \$66.13         \$117.55         15         \$2,755.20         \$1,763.25           CAT 950H         20.13         \$26.14         \$88.67         3         \$344.43         \$266.01           Cat D6T XL         23.25         \$52.66         \$88.67         3         \$423.99         \$266.01           Cat D8T - 8SU         53.08         \$102.55         \$125.45         4		
Ownership Cost/Hour:         \$16.63         \$18.37         \$22.33           Operating Cost/Hour:         \$44.38         \$46.13         \$50.07           Operator Cost/Hour:         \$27.66         \$27.66         \$27.66           Helper Cost/Hour:         \$0.00         \$25.39         \$25.39           Total Unit Cost/Hour:         \$88.67         \$117.55         \$125.45           NON ROADABLE EQUIPMENT:         Weight/         Owner ship         Haul Rig         Fleet         Haul Trip         Return Trip           Description         Unit         Cost/hr/ unit         Cost/hr/unit         Size         Cost/hr/         Cost/hr/           Cat 740         36.49         \$66.13         \$117.55         15         \$2,755.20         \$1,763.25           CAT 950H         20.13         \$26.14         \$88.67         3         \$344.43         \$266.01           Cat D6T XL         23.25         \$52.66         \$88.67         3         \$423.99         \$266.01           Cat D8T - 8SU         53.08         \$102.55         \$125.45         4         \$912.00         \$501.80		
Ownership Cost/Hour:         \$16.63         \$18.37         \$22.33           Operating Cost/Hour:         \$44.38         \$46.13         \$50.07           Operator Cost/Hour:         \$27.66         \$27.66         \$27.66           Helper Cost/Hour:         \$0.00         \$25.39         \$25.39           Total Unit Cost/Hour:         \$88.67         \$117.55         \$125.45           NON ROADABLE EQUIPMENT:         Weight/         Owner ship         Haul Rig         Fleet         Haul Trip         Return Trip           Description         Unit         Cost/hr/ unit         Cost/hr/unit         Size         Cost/hr/         Cost/hr/           Cat 740         36.49         \$66.13         \$117.55         15         \$2,755.20         \$1,763.25           CAT 950H         20.13         \$26.14         \$88.67         3         \$344.43         \$266.01           Cat D6T XL         23.25         \$52.66         \$88.67         3         \$423.99         \$266.01           Cat D8T - 8SU         53.08         \$102.55         \$125.45         4         \$912.00         \$501.80		
Operating Cost/Hour:         \$44.38         \$46.13         \$50.07           Operator Cost/Hour:         \$27.66         \$27.66         \$27.66           Helper Cost/Hour:         \$0.00         \$25.39         \$25.39           Total Unit Cost/Hour:         \$88.67         \$117.55         \$125.45           NON ROADABLE EQUIPMENT:         Second State         Second State         Second State         Second State           Machine         Weight/         Owner ship         Haul Rig         Fleet         Haul Trip         Return Trip           Description         Unit         Cost/hr/ unit         Cost/hr/unit         Size         Cost/hr/         Cost/hr/           Cat 740         36.49         \$66.13         \$117.55         15         \$2,755.20         \$1,763.25           CAT 950H         20.13         \$26.14         \$88.67         3         \$344.43         \$266.01           Cat D6T XL         23.25         \$52.66         \$88.67         3         \$423.99         \$266.01           Cat D8T - 8SU         53.08         \$102.55         \$125.45         4         \$912.00         \$501.80		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		
Helper Cost/Hour:         \$0.00         \$25.39         \$25.39           Total Unit Cost/Hour:         \$88.67         \$117.55         \$125.45           NON ROADABLE EQUIPMENT:         Weight/         Owner ship         Haul Rig         Fleet         Haul Trip         Return Trip           Description         Unit         Cost/hr/ unit         Cost/hr/unit         Size         Cost/hr/         Cost/hr/ fleet           Cat 740         36.49         \$66.13         \$117.55         15         \$2,755.20         \$1,763.25           CAT 950H         20.13         \$26.14         \$88.67         3         \$344.43         \$266.01           Cat D6T XL         23.25         \$52.66         \$88.67         3         \$423.99         \$266.01           Cat D8T - 8SU         53.08         \$102.55         \$125.45         4         \$912.00         \$501.80		
Total Unit Cost/Hour:         \$88.67         \$117.55         \$125.45           NON ROADABLE EQUIPMENT:         Machine         Weight/         Owner ship         Haul Rig         Fleet         Haul Trip         Return Trip           Description         Unit         Cost/hr/ unit         Cost/hr/unit         Size         Cost/hr/         Cost/hr/ fleet           Cat 740         36.49         \$66.13         \$117.55         15         \$2,755.20         \$1,763.25           CAT 950H         20.13         \$26.14         \$88.67         3         \$344.43         \$266.01           Cat D6T XL         23.25         \$52.66         \$88.67         3         \$423.99         \$266.01           Cat D8T - 8SU         53.08         \$102.55         \$125.45         4         \$912.00         \$501.80		
NON ROADABLE EQUIPMENT:           Machine Description         Weight/ Unit (TONS)         Owner ship Cost/hr/ unit         Haul Rig Cost/hr/unit         Fleet Size         Haul Trip Cost/hr/ fleet         Return Trip Cost/hr/ fleet           Cat 740         36.49         \$66.13         \$117.55         15         \$2,755.20         \$1,763.25           CAT 950H         20.13         \$26.14         \$88.67         3         \$344.43         \$266.01           Cat D6T XL         23.25         \$52.66         \$88.67         3         \$423.99         \$266.01           Cat D8T - 8SU         53.08         \$102.55         \$125.45         4         \$912.00         \$501.80		
Machine Description         Weight/ Unit (TONS)         Owner ship Cost/hr/ unit (TONS)         Haul Rig Cost/hr/unit \$26.13         Fleet Cost/hr/unit \$117.55         Haul Trip Cost/hr/ fleet         Return Trip Cost/hr/ fleet           Cat 740         36.49         \$66.13         \$117.55         15         \$2,755.20         \$1,763.25           CAT 950H         20.13         \$26.14         \$88.67         3         \$344.43         \$266.01           Cat D6T XL         23.25         \$52.66         \$88.67         3         \$423.99         \$266.01           Cat D8T - 8SU         53.08         \$102.55         \$125.45         4         \$912.00         \$501.80		
Description         Unit (TONS)         Cost/hr/unit Cost/hr/unit         Cost/hr/unit Cost/hr/unit         Size Size         Cost/hr/ fleet         Cost/hr/ fleet           Cat 740         36.49         \$66.13         \$117.55         15         \$2,755.20         \$1,763.25           CAT 950H         20.13         \$26.14         \$88.67         3         \$344.43         \$266.01           Cat D6T XL         23.25         \$52.66         \$88.67         3         \$423.99         \$266.01           Cat D8T - 8SU         53.08         \$102.55         \$125.45         4         \$912.00         \$501.80		
Description         Unit (TONS)         Cost/hr/unit Size         Cost/hr/ fleet         Cost/hr/ fleet         Cost/hr/ fleet         Cost/hr/ fleet           Cat 740         36.49         \$66.13         \$117.55         15         \$2,755.20         \$1,763.25           CAT 950H         20.13         \$26.14         \$88.67         3         \$344.43         \$266.01           Cat D6T XL         23.25         \$52.66         \$88.67         3         \$423.99         \$266.01           Cat D8T - 8SU         53.08         \$102.55         \$125.45         4         \$912.00         \$501.80	DOT Permit	
(TONS)         fleet           Cat 740         36.49         \$66.13         \$117.55         15         \$2,755.20         \$1,763.25           CAT 950H         20.13         \$26.14         \$88.67         3         \$344.43         \$266.01           Cat D6T XL         23.25         \$52.66         \$88.67         3         \$423.99         \$266.01           Cat D8T - 8SU         53.08         \$102.55         \$125.45         4         \$912.00         \$501.80	Cost/ fleet	
CAT 950H20.13\$26.14\$88.673\$344.43\$266.01Cat D6T XL23.25\$52.66\$88.673\$423.99\$266.01Cat D8T - 8SU53.08\$102.55\$125.454\$912.00\$501.80		
Cat D6T XL         23.25         \$52.66         \$88.67         3         \$423.99         \$266.01           Cat D8T - 8SU         53.08         \$102.55         \$125.45         4         \$912.00         \$501.80	\$3,750.00	
Cat D8T - 8SU         53.08         \$102.55         \$125.45         4         \$912.00         \$501.80	\$750.00	
	\$750.00	
Cat D9T - 9SU 66.13 \$123.06 \$125.45 4 \$994.04 \$501.80	\$1,000.00	
	\$1,000.00	
Cat D7R DS         34.57         \$66.14         \$117.55         5         \$918.45         \$587.75	\$1,250.00	
Series II LGP		
Cat D10T - 10SU         93.31         \$145.47         \$125.45         1         \$270.92         \$125.45		
CAT 12M         16.01         \$30.73         \$88.67         3         \$358.20         \$266.01	\$250.00	
Trash pump -         0.80         \$6.59         \$88.67         1         \$95.26         \$88.67	\$750.00	
70MT, 6 in.         \$25.00         \$15.54         \$89.67         4         \$416.94         \$254.69		
Drill/Broadcast 25.00 \$15.54 \$88.67 4 \$416.84 \$354.68	\$750.00 \$250.00	
Seeder with	\$750.00	
Tractor         6.00         \$8.33         \$88.67         2         \$194.00         \$177.34	\$750.00 \$250.00	
Power Mulcher 6.00 \$8.33 \$88.67 2 \$194.00 \$177.34 (Bowie LD-90)	\$750.00 \$250.00 \$1,000.00	
Broderson IC-250-         14.38         \$19.37         \$88.67         3         \$324.12         \$266.01	\$750.00 \$250.00	
Biodelson IC-230-         14.58         \$19.57         \$88.07         5         \$524.12         \$200.01           3B, 61', 16.3MT	\$750.00 \$250.00 \$1,000.00 \$500.00	
SB, 01, 10.5M1         SE, 01, 10.5M1           CAT 963D         22.29         \$50.51         \$88.67         3         \$417.54         \$266.01	\$750.00 \$250.00 \$1,000.00	

Subtotals: **\$8,424.99 \$5,430.79 \$12,750.00** 

#### **ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/	Fleet Size	Haul Trip	Return Trip
	unit		Cost/hr/ fleet	Cost/hr/ fleet
Water Tanker, 5,000 Gal.	\$83.13	3	\$249.39	\$249.39
Fuel Tanker, 6x4, 210 HP	\$59.64	4	\$238.56	\$238.56
Light Duty Pickup, 4x4, 3/4 T.	\$77.14	5	\$385.70	\$385.70
Generic 12-18 cy, 6x4	\$97.40	6	\$584.40	\$584.40
		Sub	otals: \$1 459 05	¢1 459 05

Subtotals: \$1,458.05 \$1,458.05

### **EQUIPMENT HAUL DISTANCE and Time**

DENVER 88.00 65.00	miles mph
\$332,616.87	
\$3,947.95	
_	88.00 65.00 \$332,616.87

Transportation Cycle Time:

	Non-	
	Roadable	Roadable
	Equipment	Equipment
Haul Time (Hours):	1.35	1.35
Return Time (Hours):	1.35	1.35
Loading Time (Hours):	8.00	NA
Unloading Time (Hours):	8.00	NA
Subtotals:	18.71	2.71

Total job time:	37.42	Hours
Total job cost:	\$336,565	

Climax Mine, M-1977-493

# EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description:Mobilization - Year 3							
e: Climax Mine		Permit	Action: Marc	h 2019		Permit/Job#: <u>N</u>	1977493
PROJECT IDE	NTIFICATI	ON					
Task #: T03	5	State: Co	olorado		Abbre	eviation: None	
	5/2019		ımmit			llename: M493	3-T03
Agency of	or organization	n name: DRMS					
EQUIPMENT T	'R A NSPOR	T RIG COST					
					Shift ba Cost Data Sour	<u>1</u>	
Truck	Tractor Desc	ription: GENE	RIC ON-HIGH			OR, 6X4, DIESEI	L POWERED,
Truck	r Trailer Desc	ription: G	ENERIC FOLD		2 (2ND HALF, DSENECK, DF	2006) ROP DECK EQU	IPMENT
					(25T, 50T, A)		
Cost Breakdown:							
Available Rig Ca	anasitias	0-25 Tons	26-50 Tons	51	+ Tons		
		\$16.63	\$18.37		22.33		
	Cost/Hour:	\$10.05					
i j	Cost/Hour:		\$46.13		50.07		
	Cost/Hour:	\$27.66	\$27.66		27.66		
	Cost/Hour:	\$0.00	\$25.39		25.39		
Total Unit	Cost/Hour:	\$88.67	\$117.55	\$	125.45		
NON ROADAB	LE EQUIPN	MENT:					
Machine	Weight/	Owner ship	Haul Rig	Fleet	Haul Trip	Return Trip	DOT Permit
Description	Unit (TONS)	Cost/hr/ unit	Cost/hr/unit	Size	Cost/hr/ fleet	Cost/hr/ fleet	Cost/ fleet
Cat 740	36.49	\$66.13	\$117.55	15	\$2,755.20	\$1,763.25	\$3,750.00
CAT 950H	20.13	\$26.14	\$88.67	3	\$344.43	\$266.01	\$750.00
Cat D6T XL	23.25	\$52.66	\$88.67	3	\$423.99	\$266.01	\$750.00
Cat D8T - 8SU	53.08	\$102.55	\$125.45	4	\$912.00	\$501.80	\$1,000.00
Cat D9T - 9SU	66.13	\$123.06	\$125.45	4	\$994.04	\$501.80	\$1,000.00
Cat D7R DS Series II LGP	34.57	\$66.14	\$117.55	5	\$918.45	\$587.75	\$1,250.00
Cat D10T - 10SU	93.31	\$145.47	\$125.45	1	\$270.92	\$125.45	\$250.00
CAT 12M	16.01	\$30.73	\$88.67	3	\$358.20	\$266.01	\$750.00
Trash pump - 70MT, 6 in.	0.80	\$6.59	\$88.67	1	\$95.26	\$88.67	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$15.54	\$88.67	4	\$416.84	\$354.68	\$1,000.00
Power Mulcher (Bowie LD-90)	6.00	\$8.33	\$88.67	2	\$194.00	\$177.34	\$500.00
Broderson IC-250- 3B, 61', 16.3MT	14.38	\$19.37	\$88.67	3	\$324.12	\$266.01	\$750.00
CAT 963D	22.29	\$50.51	\$88.67	3	\$417.54	\$266.01	\$750.00

Subtotals: **\$8,424.99 \$5,430.79 \$12,750.00** 

#### **ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/	Fleet Size	Haul Trip	Return Trip
	unit		Cost/hr/ fleet	Cost/hr/ fleet
Water Tanker, 5,000 Gal.	\$83.13	3	\$249.39	\$249.39
Fuel Tanker, 6x4, 210 HP	\$59.64	4	\$238.56	\$238.56
Light Duty Pickup, 4x4, 3/4 T.	\$77.14	5	\$385.70	\$385.70
Generic 12-18 cy, 6x4	\$97.40	6	\$584.40	\$584.40
		Subto	stale: <b>\$1 /58 05</b>	¢1 /59 05

\$1,458.05 Subtotals: **\$1,458.05** 

### **EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region: Total one-way travel distance: Average Travel Speed:	DENVER 88.00 65.00	miles mph
Total Non-Roadable Mob/Demob Cost *	\$332,616.87	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	\$3,947.95	

Transportation Cycle Time:

	Non-	
	Roadable	Roadable
	Equipment	Equipment
Haul Time (Hours):	1.35	1.35
Return Time (Hours):	1.35	1.35
Loading Time (Hours):	8.00	NA
Unloading Time (Hours):	8.00	NA
Subtotals:	18.71	2.71

Total job time:	37.42	Hours
Total job cost:	\$336,565	

Hydrologic Protection		Climax Mine	<u>M-19</u>	977-493					Dat	<u>e</u>	<u>18-Mar-19</u>	
<u>Task No. V01</u>		2016 Reclamation Cost Estimate							ft p	ume: 10,000 ac- er year atment		
					:	\$ Total Cost /	\$ Total Cost - 5	Total Cost - 8	\$	Total Cost - 10	\$ Total Cost - 15	\$ Total Cost - 20
Specific Task	Quantity	Unit		\$/Unit		Year	Years	Years		Years	Years	Years
Labor (water/maintenance/electrician) (8 FTE per Year)	8	FTE	\$	60,000.00	\$	480,000.00	\$ 2,400,000.00	\$ 3,840,000.00	\$	4,800,000.00	\$ 7,200,000.00	\$ 9,600,000.00
Site Supervisor (1 FTE per Year)	1	FTE	\$	80,000.00	\$	80,000.00	\$ 400,000.00	\$ 640,000.00	\$	800,000.00	\$ 1,200,000.00	\$ 1,600,000.00
Lime (11,300 Ton per Year)	11300	Ton	\$	150.00	\$	1,695,000.00	\$ 8,475,000.00	\$ 13,560,000.00	\$	16,950,000.00	\$ 25,425,000.00	\$ 33,900,000.00
Sulfuric Acid (4 Load per Year)	4	Loads	\$	7,500.00	\$	30,000.00	\$ 150,000.00	\$ 240,000.00	\$	300,000.00	\$ 450,000.00	\$ 600,000.00
Other Reagents (polymer) (40k Lbs per Year)	40000	lbs	\$	2.25	\$	90,000.00	\$ 450,000.00	\$ 720,000.00	\$	900,000.00	\$ 1,350,000.00	\$ 1,800,000.00
Power	1	Year	\$	675,000.00	\$	675,000.00	\$ 3,375,000.00	\$ 5,400,000.00	\$	6,750,000.00	\$ 10,125,000.00	\$ 13,500,000.00
Natural Gas	1	Year	\$	315,000.00	\$	315,000.00	\$ 1,575,000.00	\$ 2,520,000.00	\$	3,150,000.00	\$ 4,725,000.00	\$ 6,300,000.00
Vehicle	1	Unit	\$	15,000.00	\$	15,000.00	\$ 75,000.00	\$ 120,000.00	\$	150,000.00	\$ 225,000.00	\$ 300,000.00
Loader (1 Loader)	1	Unit	\$	60,000.00	\$	60,000.00	\$ 300,000.00	\$ 480,000.00	\$	600,000.00	\$ 900,000.00	\$ 1,200,000.00
Outside Services	1	Year	\$	50,000.00	\$	50,000.00	\$ 250,000.00	\$ 400,000.00	\$	500,000.00	\$ 750,000.00	\$ 1,000,000.00
Pump Maintenance	1	Year	\$	200,000.00	\$	200,000.00	\$ 1,000,000.00	\$ 1,600,000.00	\$	2,000,000.00	\$ 3,000,000.00	\$ 4,000,000.00
Road Maintenance	1	Year	\$	150,000.00	\$	150,000.00	\$ 750,000.00	\$ 1,200,000.00	\$	1,500,000.00	\$ 2,250,000.00	\$ 3,000,000.00
Building Maintenance	1	Year	\$	150,000.00	\$	150,000.00	\$ 750,000.00	\$ 1,200,000.00	\$	1,500,000.00	\$ 2,250,000.00	\$ 3,000,000.00
Electrical Maintenance	1	Year	\$	100,000.00	\$	100,000.00	\$ 500,000.00	\$ 800,000.00	\$	1,000,000.00	\$ 1,500,000.00	\$ 2,000,000.00
			TOTA	AL	\$	4,090,000.00	\$ 20,450,000.00	\$ 32,720,000.00	\$	40,900,000.00	\$ 61,350,000.00	\$ 81,800,000.00
									Pr	oposed Amount		
Reduced Amount to Treat	Cost Per Year	*8 Year Plan	10 Y	'ears	15	Years	20 Years	8 Year Full		10 year Full		
8,100 Acre-Feet (5 Years)	\$ 3,312,900.00	\$ 16,564,500.00	\$ 1	6,564,500.00	\$	16,564,500.00	\$ 16,564,500.00	\$ 26,503,200.00	\$	33,129,000.00		
3570 Acre Feet (3 Years)	\$ 1,460,130.00	\$ 4,380,390.00	\$	7,300,650.00	\$	14,601,300.00	\$ 21,901,950.00					
Total		\$ 20,944,890.00	\$ 2	3,865,150.00	\$	31,165,800.00	\$ 38,466,450.00					

# SITE MAINTENANCE

Task desc	ription:	Maintenance	and Environ	mental Control	l		
Climax N	Iine	Pe	rmit Action:	March 2019	Р	ermit/Job#:	M1977493
ROJEC	<u>T IDENTIFIC</u>	ATION					
Task #:	W01	State:	Colorado		Abbreviation:	None	
Date: User:	3/18/2019 JLE	County:	Summit		Filename:	Na	
	Climax M PROJEC Task #: Date:	Task W01 #: Date: 3/18/2019	Climax Mine     Pe       PROJECT IDENTIFICATION     Pe       Task     W01     State:       #:	Climax Mine       Permit Action:         PROJECT IDENTIFICATION       Providence         Task       W01       State:       Colorado         #:	Climax Mine     Permit Action:     March 2019       PROJECT IDENTIFICATION       Task     W01     State:     Colorado       #:	Climax Mine     Permit Action:     March 2019     P       PROJECT IDENTIFICATION       Task     W01     State:     Colorado     Abbreviation:       #:	Climax Mine       Permit Action:       March 2019       Permit/Job#:         PROJECT IDENTIFICATION       Task       W01       State:       Colorado       Abbreviation:       None         #:

### UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Dust Control	80.00	USER PROVIDED ITEM	1.00	1	\$37,637.00	\$37,637.00
Interceptor Drainage Control	80.00	USER PROVIDED ITEM	1.00	1	\$418,268.00	\$418,268.00
Rill and Gully Maintenance	80.00	USER PROVIDED ITEM	1.00	1	\$33,585.00	\$33,585.00
Road Maintenance	80.00	USER PROVIDED ITEM	1.00	1	\$31,687.00	\$31,687.00

Job Hours: 0.00

Total Cost: \$521,177.00

# **DEMOLITION WORK**

e: <u>Climax</u>	Mine	Permit Action: March 2019		I	M1977493		
<b>PROJE</b>	<u>CT IDENTIFIC</u>	CATION					
Task #:		State:	Colorado		Abbreviation:	None	
Date:	4/2/2019 11:34:10 AM	County:	Summit		Filename:	NA	
User:	JLE						

#### UNIT COSTS 95.90 %

#### Location adjustment:

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Demolish 6 CRUSHER SWCH HSE	80x38x15 (-) 30%	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	35,077.00	CF	\$0.19	\$6,594.48
Demolish MILL LIME SILO	60x16x16	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	15,360.00	CF	\$0.19	\$2,887.68
Demolish 6 CRUSHER SECONDARY	160x90x87	Plant (3S) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	1,252,800.00	CF	\$0.27	\$334,497.60
Demolish 6 CRUSHER PRIMARY	60x110x72	Plant (3S) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	475,200.00	CF	\$0.27	\$126,878.40
Demolish 6 CRUSHER OFFICE	30x72x16	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	34,560.00	CF	\$0.19	\$6,497.28
Demolish COVERED STORAGE	60x25x14	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	21,000.00	CF	\$0.19	\$3,948.00

Demolish TENMILE TUNNEL SHOP	34x26x16 (-) 30%	Bldg. (SN) demo./on-site disposal in	10,880.00	CF	\$0.19	\$2,045.44
		existing pit or cut - Max. 10,000 ft. haul				
Demolish TENMILE TUNL OFC	50x20x12	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	12,000.00	CF	\$0.19	\$2,256.00
Demolish TENMILE TUNL CMP HSE	18x18x12 (-) 30%	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	2,991.00	CF	\$0.19	\$562.31
Demolish TENMILE TUNL DMP HSE	40x12x10 (-) 30%	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	3,692.00	CF	\$0.19	\$694.10
Demolish POND SHOP	60x40x20 (-) 30%	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	36,923.00	CF	\$0.21	\$7,679.98
Demolish POND SHOP DOCKS	200x20x3	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	12,000.00	CF	\$0.19	\$2,256.00
Demolish TENMILE COHEREX STA	22x40x10	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	8,800.00	CF	\$0.19	\$1,654.40
Demolish 6 CRUSHER SWCH HSE- Floor	80x38	Floor, concrete, demolition only, average reinforcing - 10 in. thick	3,040.00	SF	\$1.33	\$4,043.20
Demolish 6 CRUSHER SWCH HSE- Footing	1.5Tx2W	Footing, concrete, average reinforcing - 1.5 ft. x 2 ft.	236.00	LF	\$5.03	\$1,187.08
Demolish 6 CRUSHER OFFICE - Floor	30x72x8"	Floor, concrete, demolition only, average reinforcing - 8 in. thick	2,160.00	SF	\$1.06	\$2,289.60

	n	Т	T			
Demolish 6 CRUSHER OFFICE - Footings	1.5Tx2W	Footing, concrete, average	204.00	LF	\$5.03	\$1,026.12
1 ooungo		reinforcing - 1.5 ft. x 2 ft.				
Demolish 6 CRUSHER PRIMARY - Floor	60x110x12"	Floor, concrete, demolition only, average	6,600.00	SF	\$1.59	\$10,494.00
		reinforcing - 12 in. thick				
Demolish 6 CRUSHER SECONDARY - Floor	160x90X12"	Floor, concrete, demolition only, average reinforcing - 12 in. thick	14,400.00	SF	\$1.59	\$22,896.00
Demolish 6 CRUSHER SECONDARY - Footing	2Tx3W	Footing, concrete, average reinforcing - 2.0 ft. x 3 ft.	500.00	LF	\$10.06	\$5,030.00
Demolish COVERED STORAGE - Floor	60x25x8"	Floor, concrete, demolition only, average reinforcing - 8 in. thick	1,500.00	SF	\$1.06	\$1,590.00
Demolish COVERED STORAGE - Footing	1.5Tx2W	Footing, concrete, average reinforcing - 1.5 ft. x 2 ft.	170.00	LF	\$5.03	\$855.10
Demolish MILL LIME SILO - Floor	60x16x8"	Floor, concrete, demolition only, average reinforcing - 8 in. thick	960.00	SF	\$1.06	\$1,017.60
Demolish MILL LIME SILO - Footing	1Tx2W	Footing, concrete, average reinforcing - 1.0 ft. x 2 ft.	152.00	LF	\$3.35	\$509.20
Demolish POND SHOP - Floor	60x40x8"	Floor, concrete, demolition only, average reinforcing - 8 in. thick	2,400.00	SF	\$1.06	\$2,544.00
Demolish POND SHOP - Footing	1.5Tx2W	Footing, concrete, average reinforcing - 1.5 ft. x 2 ft.	200.00	LF	\$5.03	\$1,006.00
Demolish TENMILE COHEREX STA - Floor	22x40x8"	Floor, concrete, demolition only, average reinforcing - 8 in. thick	880.00	SF	\$1.06	\$932.80
Demolish TENMILE COHEREX STA - Footing	1.5Tx2W	Footing, concrete, average	124.00	LF	\$5.03	\$623.72

		1	1	1	-	1
		reinforcing - 1.5 ft. x 2 ft.				
Demolish TENMILE TUNL CMP HSE - Floor	18x16X8"	Floor, concrete, demolition only, average reinforcing - 8 in. thick	324.00	SF	\$1.06	\$343.44
Demolish TENMILE TUNL CMP HSE - Footing	1.5Tx2W	Footing, concrete, average reinforcing - 1.5 ft. x 2 ft.	72.00	LF	\$5.03	\$362.16
Demolish TENMILE TUNL DMP HSE - Floor	40x12x8"	Floor, concrete, demolition only, average reinforcing - 8 in. thick	480.00	SF	\$1.06	\$508.80
Demolish TENMILE TUNL DMP HSE - Footing	1.5Tx2W	Footing, concrete, average reinforcing - 1.5 ft. x 2 ft.	104.00	LF	\$5.03	\$523.12
Demolish TENMILE TUNNEL SHOP - Floor	34x26x8"	Floor, concrete, demolition only, average reinforcing - 8 in. thick	884.00	SF	\$1.06	\$937.04
Demolish TENMILE TUNNEL SHOP - Footing	1.5Tx2W	Footing, concrete, average reinforcing - 1.5 ft. x 2 ft.	120.00	LF	\$5.03	\$603.60
Demolish DOMESTIC WATER PLANT- SUPERSTRUCTURE	45X81X24 (- ) 30%	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	67,480.00	CF	\$0.21	\$14,035.84
Demolish DOMESTIC WATER PLANT- SUPERSTRUCTURE - Floor	45x81x8"	Floor, concrete, demolition only, average reinforcing - 8 in. thick	3,645.00	SF	\$1.06	\$3,863.70
Demolish DOMESTIC WATER PLANT- SUPERSTRUCTURE - Footing	1Tx2W	Footing, concrete, average reinforcing - 1.0 ft. x 2 ft.	252.00	LF	\$3.35	\$844.20
Demolish 3 MILL - SUPERSTRUCTURE	725X180X80 (-) 30%	Plant (3S) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	8,030,769.20	CF	\$0.27	\$2,144,215.38
Demolish 3 MILL - Floor	725x18x12"	Floor, concrete, demolition only, average reinforcing - 12 in. thick	130,500.00	SF	\$1.59	\$207,495.00

Demolish 3 MILL - Footing	2Tx3W	Footing, concrete, average reinforcing - 2.0 ft. x 3 ft.	1,810.00	LF	\$10.06	\$18,208.60
Demolish GATEHOUSE - Superstructure	64x40x10	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	25,600.00	CF	\$0.19	\$4,812.80
Demolish GATEHOUSE - Floor	64x40x8"	Floor, concrete, demolition only, average reinforcing - 8 in. thick	2,560.00	SF	\$1.06	\$2,713.60
Demolish GATEHOUSE - Footing	1.5Tx2W	Footing, concrete, average reinforcing - 1.5 ft. x 2 ft.	206.00	LF	\$5.03	\$1,036.18
Demolish PHILLIPSON MAPP GAS HOUSE - Superstructure	20x45x8	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	7,200.00	CF	\$0.19	\$1,353.60
Demolish PHILLIPSON MAPP GASS HSE - Floor	20x45x8"	Floor, concrete, demolition only, average reinforcing - 8 in. thick	900.00	SF	\$1.06	\$954.00
Demolish PHILLIPSON MAPP GASS HOUSE - Footing	1.5Tx2W	Footing, concrete, average reinforcing - 1.5 ft. x 2 ft.	130.00	LF	\$5.03	\$653.90
Demolish OPEN PIT FUEL TANKS	100x25x8	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	20,000.00	CF	\$0.19	\$3,760.00
Demolish OPEN PIT FUEL TANKS - Floor	100x25x8"	Floor, concrete, demolition only, average reinforcing - 8 in. thick	2,500.00	SF	\$1.06	\$2,650.00
Demolish OPEN PIT FUEL TANKS - Footing	1.5Tx2W	Footing, concrete, average reinforcing - 1.5 ft. x 2 ft.	250.00	LF	\$5.03	\$1,257.50
Demolish DOMESTIC WATER TANK	44x44x40	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	77,440.00	CF	\$0.21	\$16,107.52

Demolish DOMESTIC WATER	44x44x8"	Floor, concrete,	1,936.00	SF	\$1.06	\$2,052.16
TANK - Floor		demolition only, average reinforcing - 8 in. thick				
Demolish DOMESTIC WATER TANK - Footing	1.5Tx2W	Footing, concrete, average reinforcing - 1.5	176.00	LF	\$5.03	\$885.28
		ft. x 2 ft.				
Demolish PHILLIPSON WAREHOUSE	76x94x42 (-) 30%	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	230,807.00	CF	\$0.21	\$48,007.86
Demolish PHILLIPSON WAREHOUSE - Floor	76x94x8"	Floor, concrete, demolition only, average reinforcing - 8 in. thick	7,144.00	SF	\$1.06	\$7,572.64
Demolish PHILLIPSON WAREHOUSE - Footing	1.5Tx3W	Footing, concrete, average reinforcing - 1.5 ft. x 3 ft.	340.00	LF	\$7.55	\$2,567.00
Demolish OPEN PIT PHASE 1 SHOP	146x56x52 (- ) 30%	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	327,040.00	CF	\$0.21	\$68,024.32
Demolish OPEN PIT PHASE 1 SHOP - Floor	146x56x12"	Floor, concrete, demolition only, average reinforcing - 12 in. thick	8,176.00	SF	\$1.59	\$12,999.84
Demolish OPEN PIT PHASE 1 SHOP - Footing	2Tx3W	Footing, concrete, average reinforcing - 2.0 ft. x 3 ft.	404.00	LF	\$10.06	\$4,064.24
Demolish OPEN PIT OFFICES	40x80x25 (-) 30%	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	61,538.00	CF	\$0.21	\$12,799.90
Demolish OPEN PIT OFFICES - Floor	40x80x8"	Floor, concrete, demolition only, average reinforcing - 8 in. thick	3,200.00	SF	\$1.06	\$3,392.00
Demolish OPEN PIT OFFICES - Footing	1.5Tx2W	Footing, concrete, average reinforcing - 1.5 ft. x 2 ft.	240.00	LF	\$5.03	\$1,207.20

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Demolish OPEN PIT	400x80x70 (-	Bldg. (MN)	1,895,385.00	CF	\$0.21	\$394,240.08
PHASE 2 SHOP	) 30%	demo./on-site				
		disposal in				
		existing pit or				
		cut - Max.				
		10,000 ft. haul				
Demolish OPEN PIT	400x80x12"	Floor, concrete,	35,200.00	SF	\$1.59	\$55,968.00
PHASE 2 SHOP -		demolition only,				
Floor		average				
		reinforcing - 12				
		in. thick				
Demolish OPEN PIT	2Tx3W	Footing,	1,040.00	LF	\$10.06	\$10,462.40
PHASE 2 SHOP -		concrete,				
Footing		average				
		reinforcing - 2.0				
		ft. x 3 ft.				
Demolish OPEN PIT	90x105x60 (-	Bldg. (MN)	436,154.00	CF	\$0.21	\$90,720.03
WASH BAY	) 30%	demo./on-site				
		disposal in				
		existing pit or				
		cut - Max.				
		10,000 ft. haul				
Demolish OPEN PIT	90x105x12"	Floor, concrete,	9,450.00	SF	\$1.59	\$15,025.50
WASH BAY - Floor		demolition only,				
		average				
		reinforcing - 12				
		in. thick				
Demolish OPEN PIT	2Tx3w	Footing,	390.00	LF	\$10.06	\$3,923.40
WASH BAY -		concrete,				
Footing		average				
		reinforcing - 2.0				
		ft. x 3 ft.				

				<b>Total Cost</b>	
		Subtotal		(adjusted for	
Job Hours:	0.00	(unadjusted):	\$3,715,647.92	location):	\$3,563,306.36

# DEMOLITION WORK

: Climax M	ine	Pe	rmit Action:	March 2019	]	Permit/Job#:	M1977493
PROJECT	<u>r identific</u>	CATION					
Task #:	X02	State:	Colorado		Abbreviation:	None	
Date: User:	3/21/2019 JLE	County:	Summit		Filename:	Na	

# UNIT COSTS

# <u>95.90 %</u>

# Location adjustment:

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
CHALK MTN PUMP HOUSE- SUPERSTRUCTURE	25x25x20	Bldg. (MN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	9,615.30	CF	\$0.21	\$1,999.98
CHALK MTN PUMP HOUSE- SUPERSTRUCTURE - Floor	25x25x8"	Floor, concrete, demolition only, average reinforcing - 8 in. thick	625.00	SF	\$1.06	\$662.50
CHALK MTN PUMP HOUSE- SUPERSTRUCTURE - Footing	1.5Tx2W	Footing, concrete, average reinforcing - 1.5 ft. x 2 ft.	100.00	LF	\$5.03	\$503.00
OPEN PIT SHOP SUB- SUPERSTRUCTURE	25x25x15	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	9,375.00	CF	\$0.19	\$1,762.50
OPEN PIT SHOP SUB- SUPERSTRUCTURE - Floor	25x25x8"	Floor, concrete, demolition only, average reinforcing - 8 in. thick	625.00	SF	\$1.06	\$662.50
CHALK MOUNTAIN / ROBINSON LAKE SUB	20x8x8	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	1,280.00	CF	\$0.19	\$240.64
CAVR SUBSTATION- SUPERSTRUCTURE	28x20x15	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	8,400.00	CF	\$0.19	\$1,579.20

CAVR SUBSTATION- SUPERSTRUCTURE - Floor	10x20x12"	Floor, concrete, demolition only, average reinforcing - 12 in. thick	200.00	SF	\$1.59	\$318.00
OLD HOSPITAL SUB- SUPERSTRUCTURE	60x30x8	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	14,400.00	CF	\$0.19	\$2,707.20
OLD HOSPITAL SUB- SUPERSTRUCTURE - Floor	44x8x12"	Floor, concrete, demolition only, average reinforcing - 12 in. thick	325.00	SF	\$1.59	\$516.75
DOMESTIC WATER SUB- WOOD STRUCTURE	20x20x8	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	3,200.00	CF	\$0.19	\$601.60
DOMESTIC WATER SUB- WOOD STRUCTURE - Floor	8x4x12"	Floor, concrete, demolition only, average reinforcing - 12 in. thick	32.00	SF	\$1.59	\$50.88
IRECO PLANT SUB- SUPERSTRUCTURE	20x20x8	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	3,200.00	CF	\$0.19	\$601.60
IRECO PLANT SUB- SUPERSTRUCTURE - Floor	12x12x6"	Floor, concrete, demolition only, average reinforcing - 6 in. thick	144.00	SF	\$0.80	\$115.20
TAILING DELIVERY HOUSE SUBSTATION	8x8x8	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	512.00	CF	\$0.19	\$96.26
TAILING DELIVERY HOUSE SUBSTATION - Containment Cell	8x8x18"	Floor, concrete, demolition only, average reinforcing - 12 in. thick	64.00	SF	\$1.59	\$101.76
OPEN PIT UTIL LINES- 21 POLES	21 Poles	Utility Poles, Wood 35' - 45' high (each pole)	21.00	EA	\$258.00	\$5,418.00
OPEN PIT UTIL LINES- 21 POLES - Line	4977 LF	Disposal of utility pole cross arms and hardware surplus material	4,977.00	LF	\$0.01	\$49.77
TAILING UTILITY LINE- 25 POLES	25 Poles	Utility Poles, Wood 35' - 45' high (each pole)	25.00	EA	\$258.00	\$6,450.00

Climax Mine, M-1977-493

March 2019, DRMS Cost Estimate

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TAILING UTILITY LINE- 25 POLES - Line	5925 LF	Disposal of utility pole cross arms and hardware surplus material	5,295.00	LF	\$0.01	\$52.95
				Tat	al Cost	

				Total Cost	
		Subtotal		(adjusted for	
Job Hours:	0.00	(unadjusted):	\$24,490.29	location):	\$23,486.19

# **DEMOLITION WORK**

Task de	escription:	Demolition 3- New St	ructures			
te: Climax	Mine	Permit Act	tion: March 2019	Permit/Job#:		M1977493
<u>PROJE</u>	CT IDENTIFIC	CATION				
Task #:		State: Colora	ado	Abbreviation:	None	
Date:	4/2/2019 11:40:16 AM	County: Summ	it	Filename:	NA	
User:	JLE					

UNIT COSTS 95.90 % Location adjustment:

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Explosives Shed (Powder Storage)	13x8x8 (-) 30%	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	640.00	CF	\$0.19	\$120.32
Train Shack at Ten Mile North Portal	50x20x14	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	10,769.23	CF	\$0.19	\$2,024.62
Mayflower Coherex Station	7x8x19	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	1,064.00	CF	\$0.19	\$200.03
Mayflower Coherex Station - Floor	36x30x2	Floor, concrete, demolition only, average reinforcing - 12 in. thick	2,160.00	SF	\$1.59	\$3,434.40
Mayflower Coherex Station - Floor 2	50x30x1	Floor, concrete, demolition only, average reinforcing - 12 in. thick	1,500.00	SF	\$1.59	\$2,385.00
Supply Canal No. 2 Pipeline - Pipe grouting	393 CF	USER PROVIDED ITEM	393.00	CF	\$34.00	\$13,362.00
Mill Return Pipeline - Pipe grouting	56 CF	USER PROVIDED ITEM	56.00	CF	\$34.00	\$1,904.00
Supply Canal No. 2 Pipeline - 3	80x2x8	Slab on grade, concrete, demolition only	47.41	СҮ	\$156.50	\$7,419.67

-		~ .				
Dam,		- Rod				
Concrete		reinforcing				
Footing						
Mayflower	10x10x35((x2)	USER	2.00	Each	\$265,000.00	\$530,000.00
Flood Bypass		PROVIDED				
Tunnel		ITEM				
New Mill	1105x805x320	Plant (3S)	11,497,500.00	CF	\$0.27	\$3,069,832.50
Bldg		demo./on-site				
C		disposal in				
		existing pit or				
		cut - Max.				
		10,000 ft. haul				
3 Dam	63x30x30 (-)	Bldg. (MN)	43,616.00	CF	\$0.21	\$9,072.13
Pumpstation		demo./on-site	.0,010.00	01	\$ 0 <b>1 - 1</b>	¢,,,,, <b>_</b> ,, <b>_</b> ,, <b>_</b> ,,,
rumpstution		disposal in				
		existing pit or				
		cut - Max.				
		10,000 ft. haul				
Coarse Ore	Unknown	USER	1.00	Each	\$175,000.00	\$175,000.00
Dome	UIIKIIOWII	PROVIDED	1.00	Lacii	\$175,000.00	\$175,000.00
Donne		ITEM				
New Scale	80x16x16		15,754.00	CE	\$0.21	¢2 276 92
	80x10x10	Bldg. (MN) demo./on-site	15,754.00	CF	\$0.21	\$3,276.83
House						
		disposal in				
		existing pit or				
		cut - Max.				
	2.500 X 17	10,000 ft. haul	<b>a F</b> 00.00		<b>\$0.02</b>	<b>\$7</b> 0.00
5-Dam	2500 LF	Disposal of	2,500.00	LF	\$0.02	\$50.00
Powerline		utility pole and				
		hardware				
		surplus material				
5 Dam Utility	13	Utility Poles,	13.00	EA	\$258.00	\$3,354.00
Poles		Wood 35' - 45'				
		high (each pole)				
Raw Water	64x64x66	Bldg. (MN)	270,336.00	CF	\$0.21	\$56,229.89
Tank		demo./on-site				
		disposal in				
		existing pit or				
		cut - Max.				
		10,000 ft. haul				
Raw Water	64x64x12"	Floor, concrete,	8,192.00	SF	\$1.59	\$13,025.28
Tank - Floor		demolition only,				
		average				
		reinforcing - 12				
		in. thick				
Mill Water	64x64x66	Bldg. (MN)	270,336.00	CF	\$0.21	\$56,229.89
Tank		demo./on-site				
		disposal in				
		existing pit or				
		cut - Max.				
		10,000 ft. haul				
Mill Water	66x64x12"	Floor, concrete,	8,192.00	SF	\$1.59	\$13,025.28
Tank - Floor		demolition only,	-,			,
		average				
		reinforcing - 12				
		in. thick				
Mayflower	22x26x18	Bldg. (MN)	10,296.00	CF	\$0.21	\$2,141.57
Cyclone	22/20/10	demo./on-site	10,290.00	~	40. <b>2</b> 1	Ψ=,1 11.57
Station		disposal in				
Station		usposu III	L	1	1	

		existing pit or cut - Max. 10,000 ft. haul				
Mayflower Cyclone Station - Floor	22x26x12"	Floor, concrete, demolition only, average reinforcing - 12 in. thick	1,144.00	SF	\$1.59	\$1,818.96

				<b>Total Cost</b>	
		Subtotal		(adjusted for	
Job Hours:	0.00	(unadjusted):	\$3,963,906.37	location):	\$3,801,386.21

# **DEMOLITION WORK**

	Task dese	cription:	Disposal of R	eagents					
Site:	Climax N	Mine	Pe	rmit Action:	March 2019	P	ermit/Job#:	M1977493	
	<b>PROJEC</b>	<u>CT IDENTIFIC</u>	ATION						
	Task #:	Y01	State:	Colorado		Abbreviation:	None		
	Date: User:	3/21/2019 JLE	County:	Summit		Filename:	NA		
	A	Agency or organiz	zation name:	DRMS					

#### UNIT COSTS

### Location adjustment: 95.90 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
POLYCHLORINATED	156	USER	156.00	EA	\$601.25	\$93,795.00
BIPHENYL	Capacitors	PROVIDED ITEM				
RADIATION	25	USER	25.00	EA	\$1,000.00	\$25,000.00
SOURCES		PROVIDED ITEM				
Reagents (Various see Climax Estimate)	19816	Hazardous waste removal - Bulk liquids, large quantities (over 2,500 gal.)	19,816.00	GAL	\$2.38	\$47,162.08
pH Adjustment	56	USER PROVIDED ITEM	56.00	Ton	\$1.50	\$84.00
Flocculent	2063	USER PROVIDED ITEM	2,063.00	lbs	\$1.50	\$3,094.50

		Subtotal		(adjusted for	
Job Hours:	0.00	(unadjusted):	\$169,135.58	location):	\$162,201.02